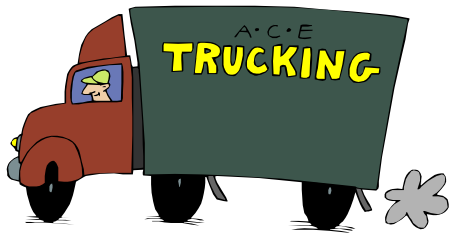
California Project Management Methodology Express Training

Welcome!

Instructor Info

Logistics

- Start and finish
- Breaks and lunch
- Facilities, telephones, and messages
- Questions, class discussions, and exercises
- Downloaded materials



Introductions

- Name
- Organization
- Job responsibility
- How long have you been with your organization?
- Describe your project management experience

Objectives

- At the conclusion of this session each participant will be able to:
  - Describe the CA-PMM
  - Navigate and complete the Concept Toolkit
  - Navigate and complete the CA-PMM Toolkit
  - Describe the Technology Agency policies regarding the use of the CA-PMM

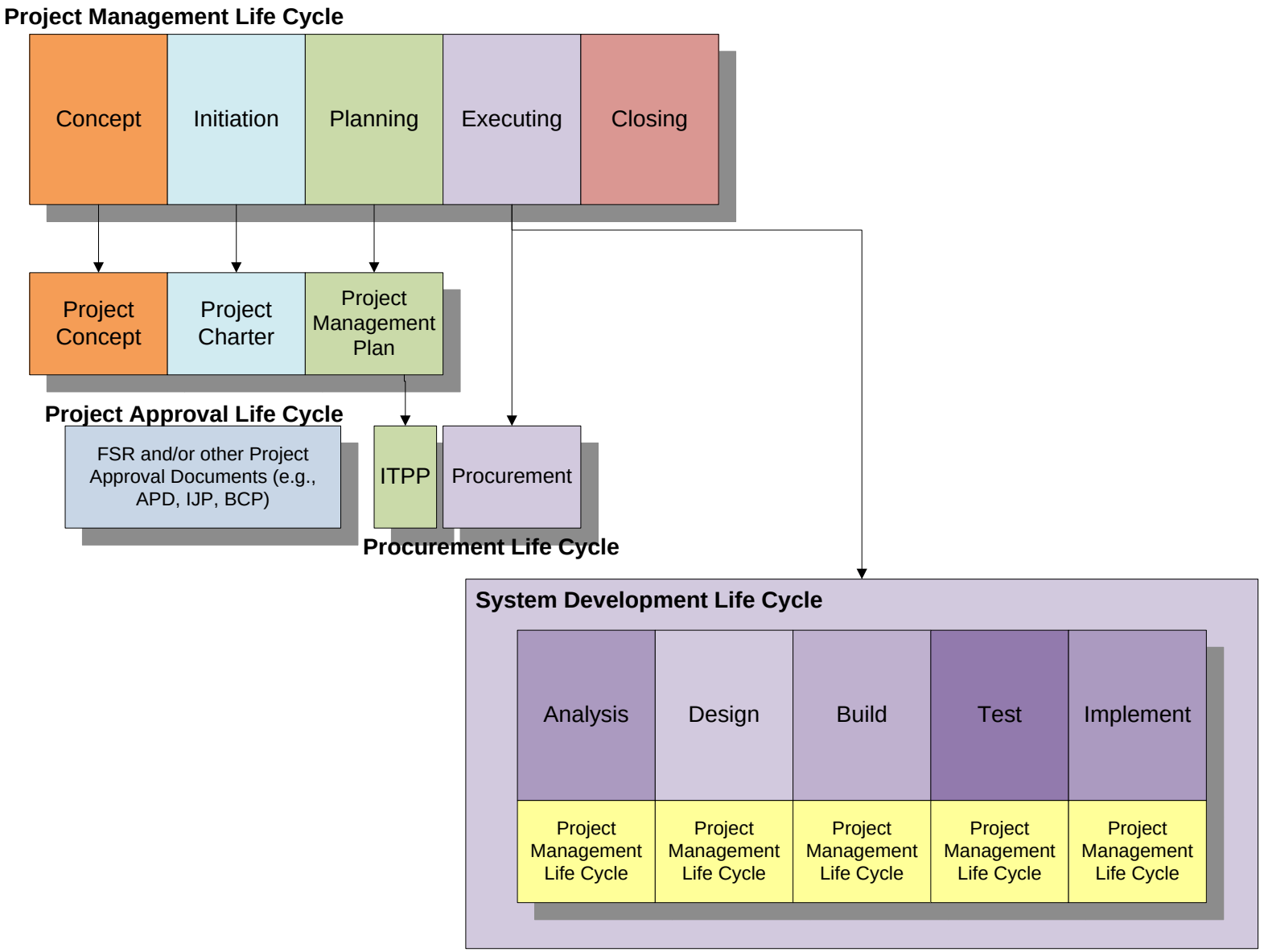
IT Policy Letter

- Purpose – CA-PMM serves as the states' IT project management standard
- Background – May 15, 2008 *Supplemental Report of the 2007 Budget Act Item 0502-001-9730 1*

Policy

- CA-PMM Toolkit Implementation
- IT Project Complexity
- Status Reporting
- CA-PMM Training Requirements
- Scheduling Software
- Use of Additional or Supplemental Project Management Tools

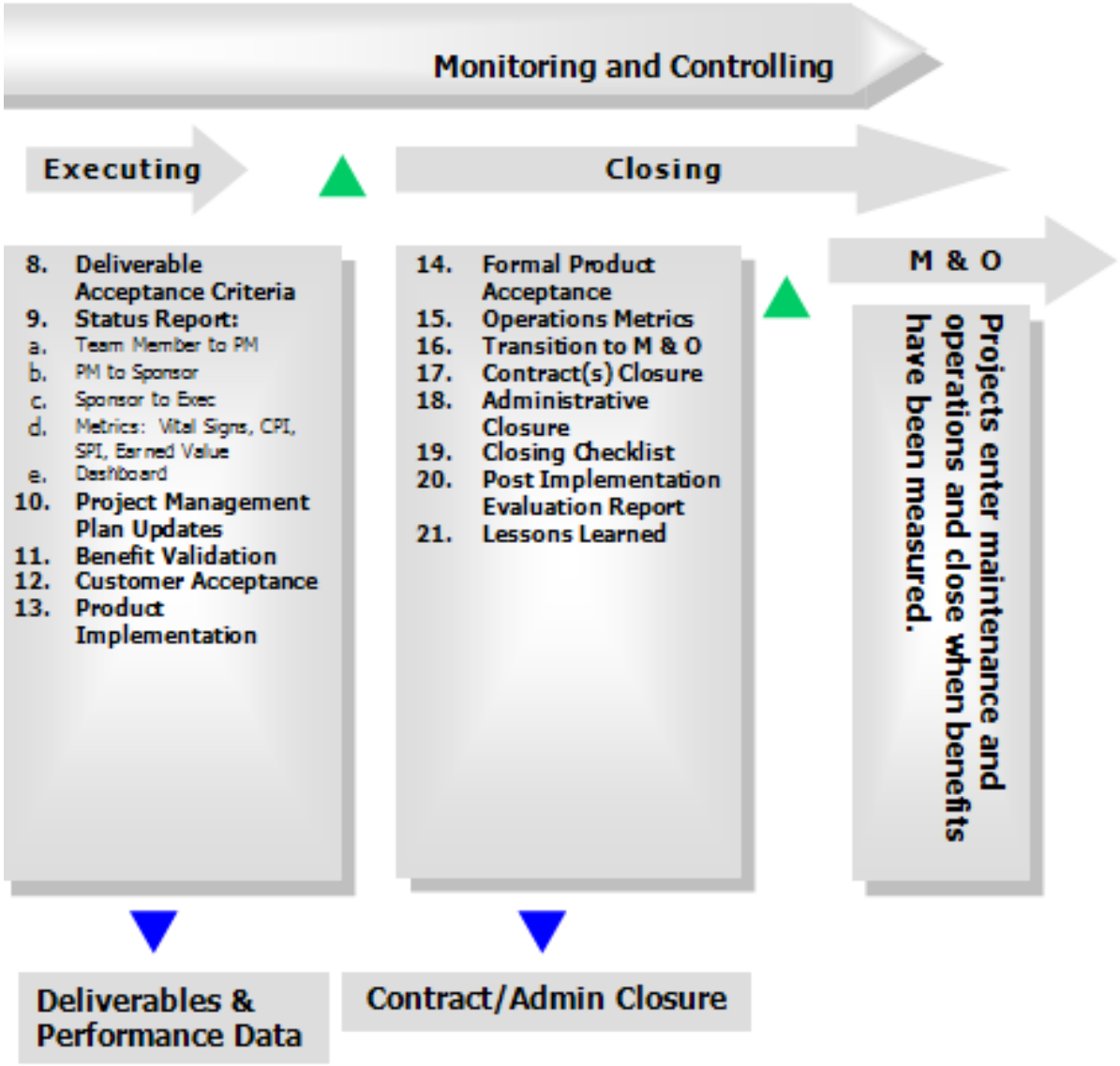
Methodology Framework



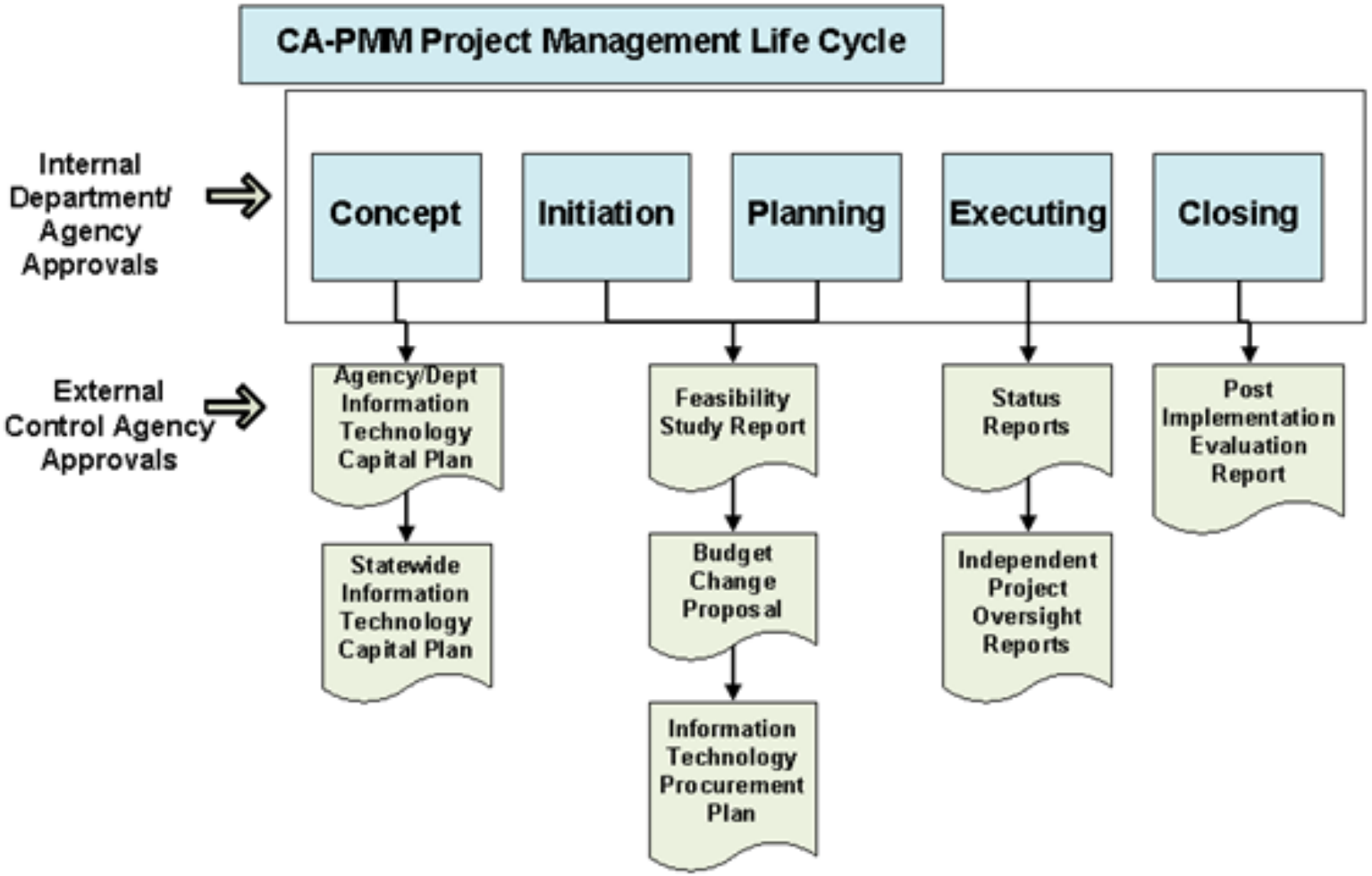
CA-PMM


Monitoring and Controlling
Concept
Initiating
Planning
1. Project Concept Statement
2. Size Estimate (ROM)
3. Project Charter
a. Background
b. Objectives
c. Proposed Solution
d. Preliminary Scope Statement
e. Impact Assessment
f. Deadline
g. Size Estimate
h. Complexity Assessment
i. High Level Project Org
j. Project Priorities
k. Assumptions
l. Constraints
m. Procurement Assumptions
n. Known Risks
o. Runaway Triggers
p. Shutdown Conditions
q. Stakeholder Analysis
4. Issue Log
5. Project Management Plan:
a. Scope Management Plan
b. Configuration/Change Control
c. Human Resources Plan
e. Communication Plan
f. Risk Management Plan
g. Cost Management Plan
h. Quality Management Plan
i. Schedule Management Plan
j. Procurement Plan
h. Contract Management Plan
6. Organizational Change Management Plan
7. Transition to Maintenance and Operations Plan
Concept Statement
Project Charter
Project Management Plan

CA-PMM


Monitoring and Controlling
Executing
Closing
M & O
8. Deliverable Acceptance Criteria
9. Status Report:
a. Team Member to PM
b. PM to Sponsor
c. Sponsor to Exec
d. Metrics: Vital Signs, CPI, SPI, Earned Value
e. Dashboard
10. Project Management Plan Updates
11. Benefit Validation
12. Customer Acceptance
13. Product Implementation
14. Formal Product Acceptance
15. Operations Metrics
16. Transition to M & O
17. Contract(s) Closure
18. Administrative Closure
19. Closing Checklist
20. Post Implementation Evaluation Report
21. Lessons Learned
Projects enter maintenance and operations and close when benefits have been measured.
Deliverables & Performance Data
Contract/Admin Closure

CA-PMM and External Approvals



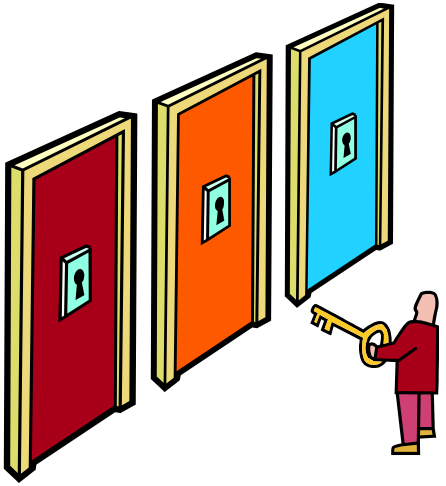
CA-PMM Express

- Focus is on the CA-PMM tools
- Scalability
- Vocabulary

What is the Minimum Criteria for an Effort to be an IT Project?

- Consumes at least 500 hours of effort
- Provides an IT solution to a business problem/opportunity
- Is a unique effort
- Has a start date
- Has a target finish date
- Has defined objectives
- Has named deliverables
- Has a defined budget and resources

Project Selection



Your Project

- Business problem or opportunity
- Duration
- Multiple human resources

- All team members can be engaged
- Cannot be completed or underway
- PM must have 100% attendance

CA-PMM Toolkits

- Concept Toolkit
  - Concept Statement
  - Size Estimating
- CA-PMM Toolkit
  - Project Information
  - Template Inventory
  - Initiating
  - Planning
  - Executing
  - Closing
  - Acronyms

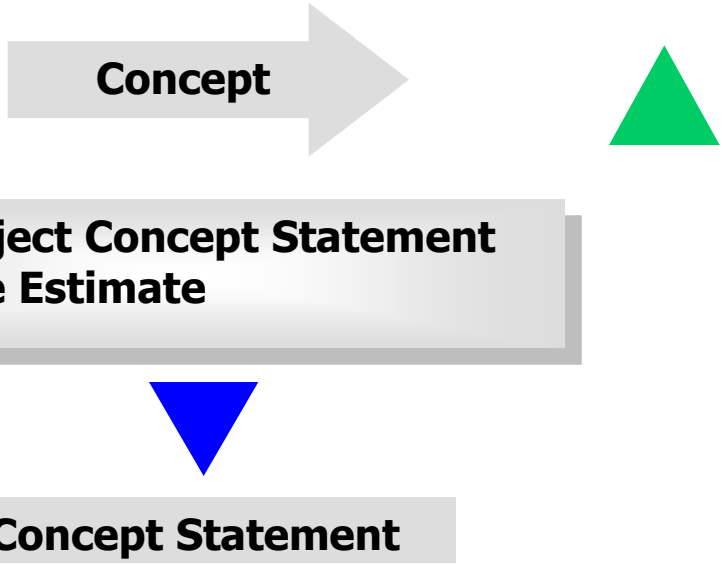
Toolkit ReadMe File

- Microsoft Excel® Basics
- Getting Started
- Toolkit Contents
- Workbook Navigation
- Using the Workbook
- Saving and Exiting
- Printing
- Contact

Concept Stage

Concept Stage

- The purpose of the Concept Stage is to communicate high-level information about a project idea.
- The major output of the Concept Stage is the Concept Statement.



Concept Statement

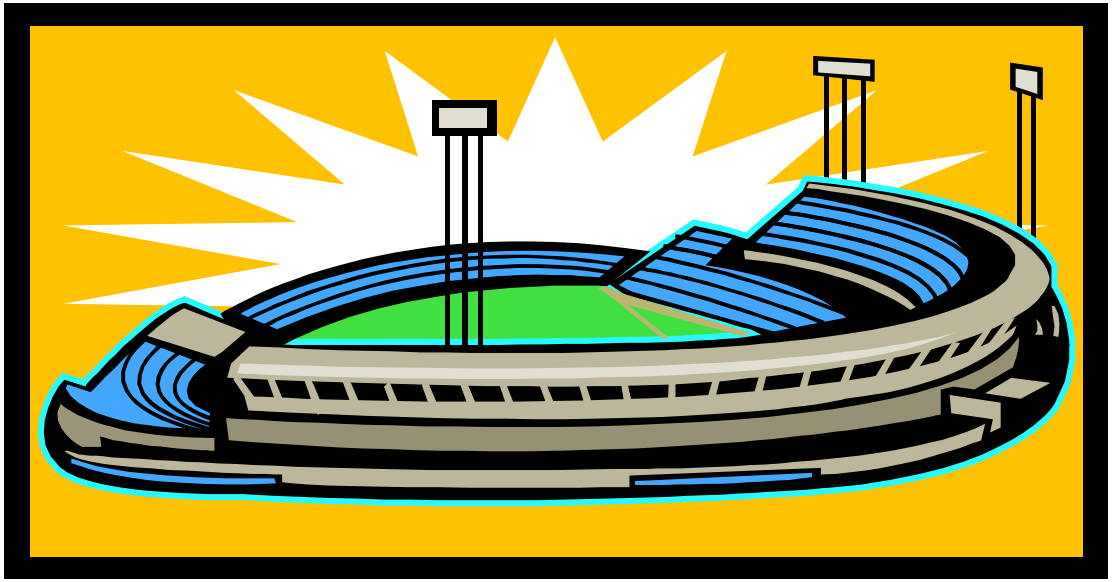
- Description
- Need Statement
- Benefit Statement
  - Tangible
  - Intangible
- Consistency
- Impact to Other Agencies
- Solution Alternatives
- Recommendations
- Project Approach

Concept Statement Exercise

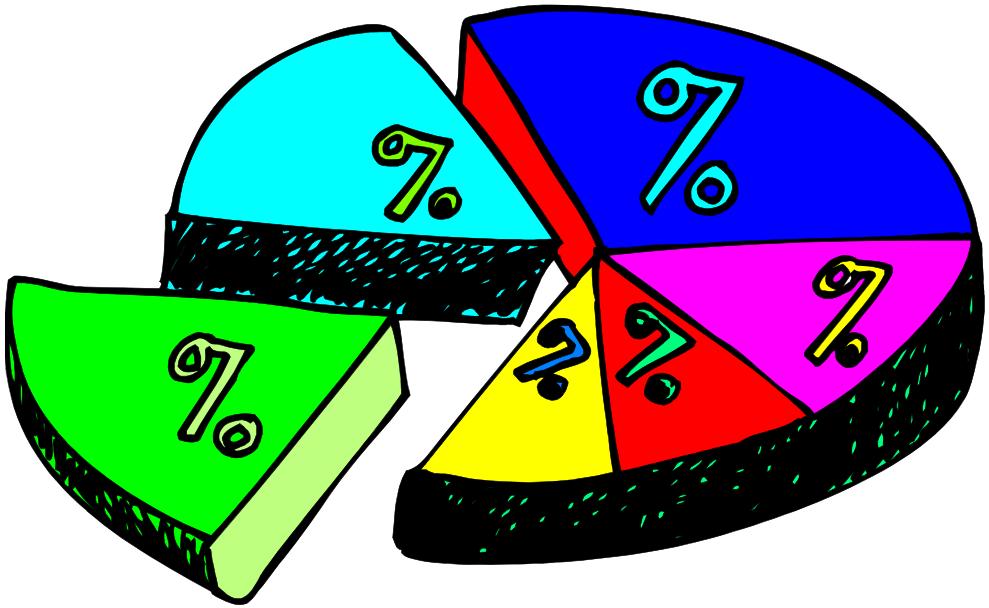
- Complete a Concept Statement for the project you selected.
- Timing: 20 minutes

Size Estimating

- High-level estimate of:
  - Cost
  - Duration
  - Resources



Effort Distribution Estimating Model

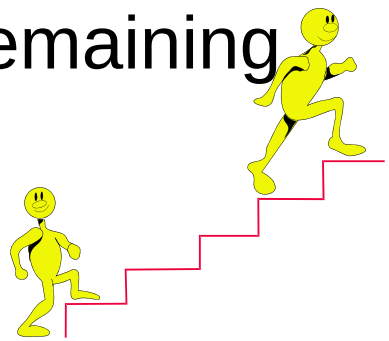


Effort Distribution Estimating

- Developed during the Concept Stage
- Supports management decision making
- Does not have a high level of accuracy
- Relies on historical data

Effort Distribution Estimating Steps

- Step 1a: Select a Phase-Based Model
- Step 1b: Calibrate the Model
- Step 2: Identify a Base Phase
- Step 3: Develop Effort Estimate for the Base Phase
- Step 4: Compute Total Project Hours
- Step 5: Extrapolate the Effort of Each Remaining Phase

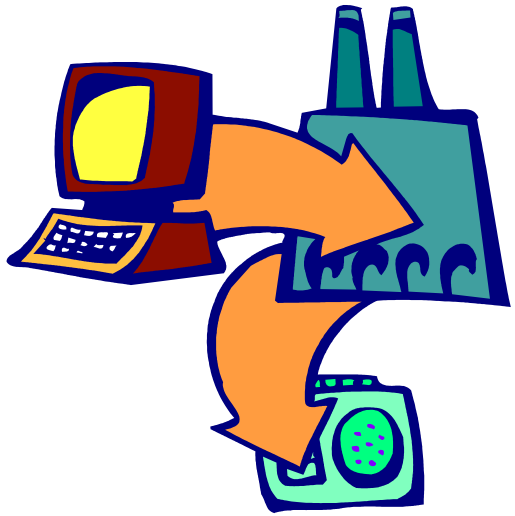


Steps - continued

- Step 6: Compute Phase Work Months
- Step 7: Develop Resource Estimate
- Step 8: Compute Duration
- Step 9: Prepare Phase-Based Gantt
- Step 10: Estimate Cost

Step 1: Phase-Based Model

- Reflects how effort is distributed across phases
- Is based on any of the following:
  - Organizational historical data
  - Personal history and experience
  - Another project team
  - Industry data
  - Vendor supplied data



Step 1a: Phase-Based Model

Phase Number	Phase Name	Model %
1	Procurement	5%
2	Analysis	15%
3	Design	20%
4	Development	30%
5	Test	10%
6	Implementation	15%
7	Transition to M&O	5%

Total = 100%

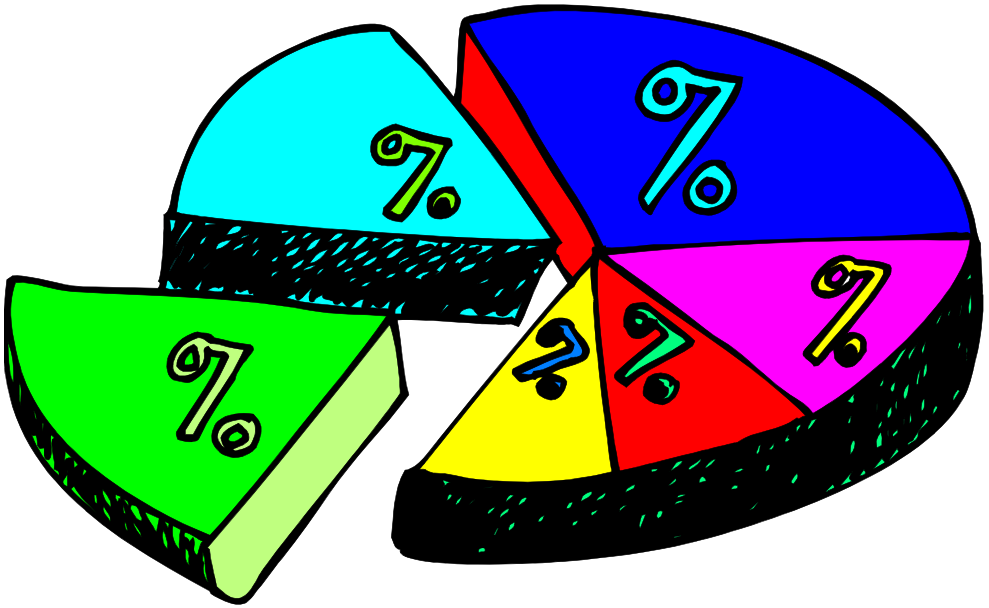
Step 1b: Model Calibration

Phase Number	Phase Name	Model %
1	Procurement	5%
2	Analysis	15%
3	Design	**25%**
4	Development	30%
5	Test	**15%**
6	Implementation	15%
7	Transition to M&O	5%

Total = 110%

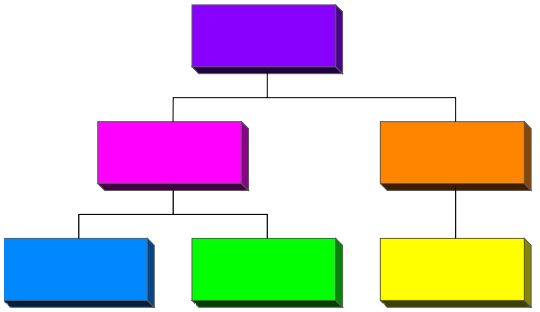
Step 2: Select Base-Phase

- The Phase most familiar to you
  - Minimum of 15% of total project effort
  - Ideally at least 30%



Step 3: Estimate Base-Phase Effort

- Create a WBS of the base phase
- Develop effort estimates to complete the base phase using task-based estimates



Step 4: Total Project Hours

Base Phase	%	Effort Estimate	÷	%	=	Total Project Hours
Development	30%	8500	÷	.30		28333

Step 5: Phase Effort

Phases	%	Total Project Hours	*	%	=	Effort Estimate
Procurement	5%	28333		.05		1417
Req. Analysis	15%	28333	*	.15	=	4250
Design	**25%**	28333	*	.25	=	7083
Development	30%	28333	*	.30	=	8500
Test	15%	28333	*	.15	=	4250
Implementation	15%	28333	*	.15		4250
Transition to M&O	5%	28333	*	.05	=	1417
Total Estimated Hours 31,167						

Step 6: Phase Work months

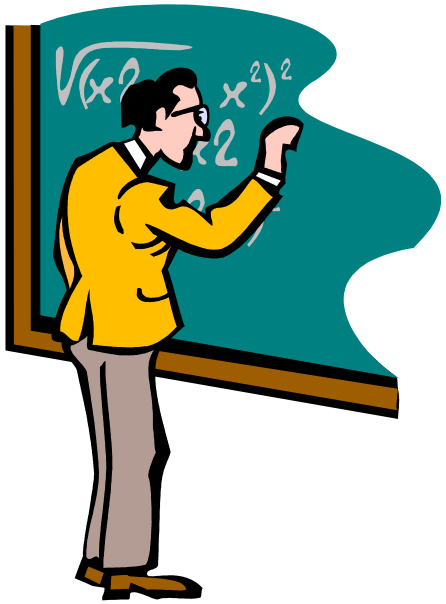
- Productive hours per work month/FTE
  - Prod Hours/Day * Prod Days/Month
- Example:
  - 6.5 * 19 = 123 hrs Per Month

Step 6: Phase Work months

Phase	Effort	÷	FTE Hrs/mo	=	Work Months
Procurement	1417	÷	123	=	11.5
Req. Analysis	4250	÷	123	=	34.6
Design	7083	÷	123	=	57.6
Development	8500	÷	123	=	69.1
Test	4250	÷	123	=	34.6
Implement	4250	÷	123	=	34.6
Transition to M&O	1417	÷	123	=	11.5

Step 7: Resource Estimates

- Number of Optimal Full Time Equivalent (OFTE) resources
- Formula: $\mathbf{OFTE = \sqrt{Work\ Months} + 1}$



Step 7: Resource Estimates

- 15 tasks
- Each task can be completed by one person in one day
- All of the tasks are independent of each other
- Resources Needed
  - 1 Person 15 days
  - 2 People 8 days
  - 3 People 5 days
  - 4 People 4 days
  - 5 People 3 days
  - 6 People 3 days
  - 7 People 3 days
  - 8 People 2 days

Optimum Resource Usage

Diminishing Return

Step 7: Resource Estimates

$$\text{OFTE} = \sqrt{\text{Work Months}} + 1$$

Phase	Work Months	Square Root	+	1	=	OFTE
Procurement	11.5	3.4	+	1	=	4.5*
Req. Analysis	34.6	5.9	+	1	=	7
Design	57.6	7.6	+	1	=	8
Development	69.1	8.3	+	1	=	9.5
Test	34.6	5.9	+	1	=	7
Implement	34.6	5.9	+	1	=	7
Transition to M&O	11.5	3.4	+	1	=	4.5

*round to the nearest half

Step 8: Phase Duration (OFTE)

Phase	Work Months	÷	OFTE	=	Estimated* Duration
Procurement	11.5	÷	4.5	=	2.5*
Req. Analysis	34.6	÷	7	=	5
Design	57.6	÷	8	=	7
Development	69.1	÷	9.5	=	7.5
Test	34.6	÷	7	=	5
Implement	34.6	÷	7	=	5
Transition to M&O	11.5	÷	4.5	=	2.5

***round to the nearest half**

Step 8: Phase Duration (PFTE)

- Probable full time equivalent (PFTE) resources
- The number of PFTE should be equal to or less than the OFTE

Step 8: Phase Duration (PFTE)

Phase	Work Months	÷	PFTE	=	Estimated Duration
Procurement	12.4	÷	3	=	4
Req. Analysis	37.3	÷	6	=	6
Design	62.1	÷	5.5	=	11.5
Development	74.6	÷	7.5	=	10
Test	37.3	÷	4	=	9.5
Implement	37.3	÷	4	=	9.5
Transition to M&O	12.4	÷	2	=	6

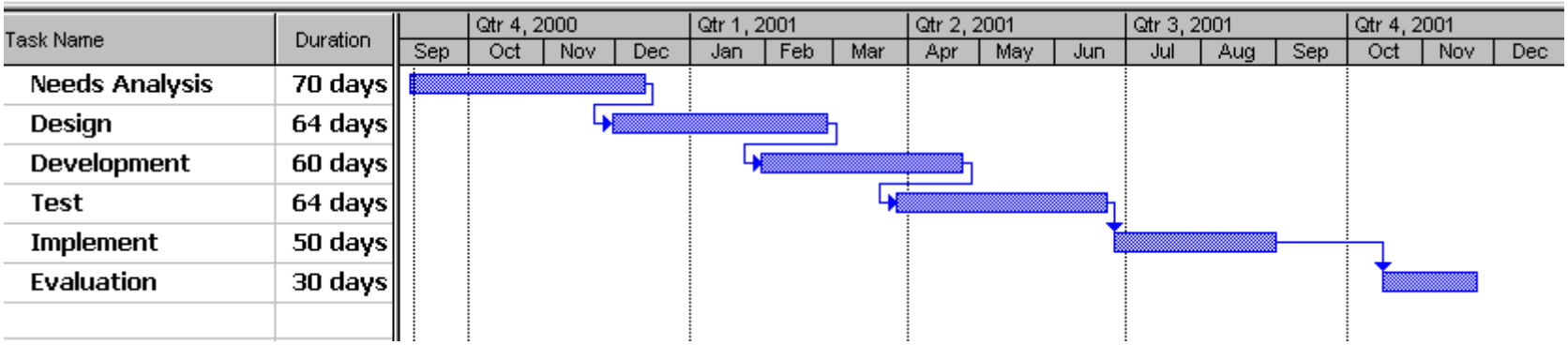
Step 8: Project Management Effort

- Project management effort adds 5% – 20% to total project effort
- Does not necessarily impact duration; runs in parallel with project work

Step 8: Project Management Effort

Phase	PM Effort
Procurement	10%
Req. Analysis	20%
Design	20%
Development	15%
Test	10%
Implement	15%
Transition to M&O	10%

Step 9: Phase-Based Gantt



The durations plotted above include additional lag days incorporated by the project manager.

Step 10: Cost Estimating

- Burdened rate
- Estimated effort for each phase
- Compute the cost estimate for each phase
- Consider additional expenses

Estimated Effort x Burdened Rate = Estimated Cost

Step 10: Cost Estimating

PH	EH	*	1+ PM	=	TEE	*	BR	=	LC	+	AE	=	TC
Pro	857	*	1.1	=	943	*	$95	=	$90K	+	$5K	=	$95K
An	2571	*	1.2	=	3085	*	$95	=	$293K	+	$35K	=	$328K
Des	3429	*	1.2	=	4115	*	$95	=	$391K	+	$10K	=	$401K
Dev	5143		1.15		5914		$95		$562K	+	$38K		$600K
Tst	1714	*	1.10	=	1885	*	$95	=	$179K	+	$15K	=	$194K
Imp	2571	*	1.15	=	2957	*	$95	=	$281K	+	$25K	=	$306K
M&O	857	*	1.10	=	943	*	$95	=	$90K	+	$5K	=	$95k
											Total Cost		$2006K
											+35%		**$702K**
											Estimated Project Cost		$2708K

Size Estimating Template

Print Worksheet
Copy Responses
Send to WORD

Project Name:
OCIO Project #:
Department:
Revision Date:

Estimating Summary

Click to Start

Project Phases	Effort Hours	PM Effort %	Total Effort Estimate	Internal Labor Costs ($)	External Labor Costs ($)	Prof. Fees ($ 000)	Misc. Fees ($ 000)	SW Costs ($ 000)	HW Costs ($ 000)	Estimated Costs ($)
Procurement	0	0	0	0	0	0	0	0	0	0
Requirements Analysis	0	0	0	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0	0	0	0
Development	0	0	0	0	0	0	0	0	0	0
Test	0	0	0	0	0	0	0	0	0	0
Implement	0	0	0	0	0	0	0	0	0	0
Transition to M&O	0	0	0	0	0	0	0	0	0	0
Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Estimated Project Cost	$0
35%	$0
Total Estimated Project Cost	**$0**

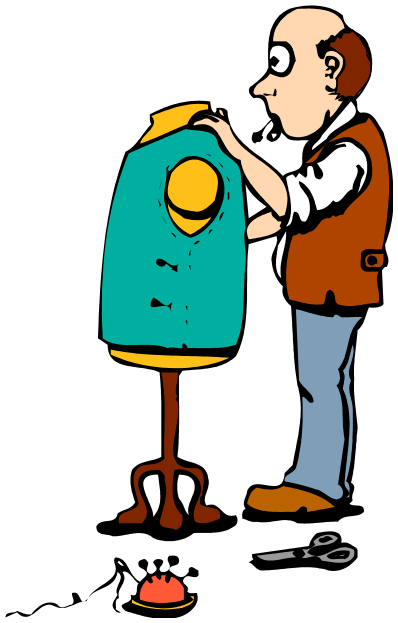
Est. Project Duration (Months)	0
35%	0
Total Est. Project Duration (Months)	**0**

Size Estimate Exercise

- Complete the size estimating templates for your project.
- Timing: 15 minutes

Effort Distribution Estimating – Fit

- Medium to large projects
- Well-defined lifecycle methodology
- Not suitable for new or emerging technology projects
- Suitable for major enhancements



Initiating Stage

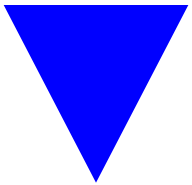
Initiating – Purpose

- Purpose
  - Authorize the start of a new project or the start of a new project phase
  - Often begun by the organization that is requesting the product or service
- The major output of the Initiating Stage is the Project Charter.

CA PMM Initiating Key Tasks

Initiating

3. **Project Charter**
4. **Issue Log**



Project Charter

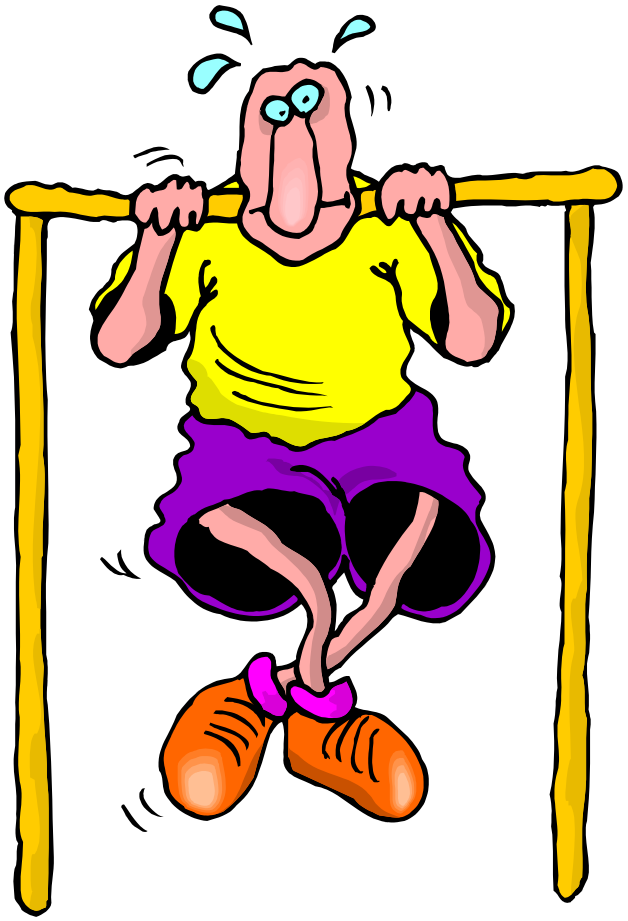
Objectives and Measures

- Payroll Outsourcing Project –
  - Reduce cost of producing payroll by 25% by December 31.
  - Zero reduction in quality.

Critical Success Indicators	***Metrics***
Cost reduction	-25% relative to last year's payroll cost
On-time payroll delivery	On-time delivery >99.9% to all payroll recipients
Payroll errors	<0.1%
Security	Provision of contract and verified by annual security audit

Exercise

- Complete the Background, Objectives, and Solution sections of the Project Charter Template.
- Timing: 15 minutes



High Level Requirements

Objective → **High Level Requirements** → **Priority**

- Must Have
- Should Have
- Nice to Have

High Level Requirements Exercise

- Complete the High Level Requirements section of the Project Charter
- Timing: 15 minutes

Three Areas of Scope

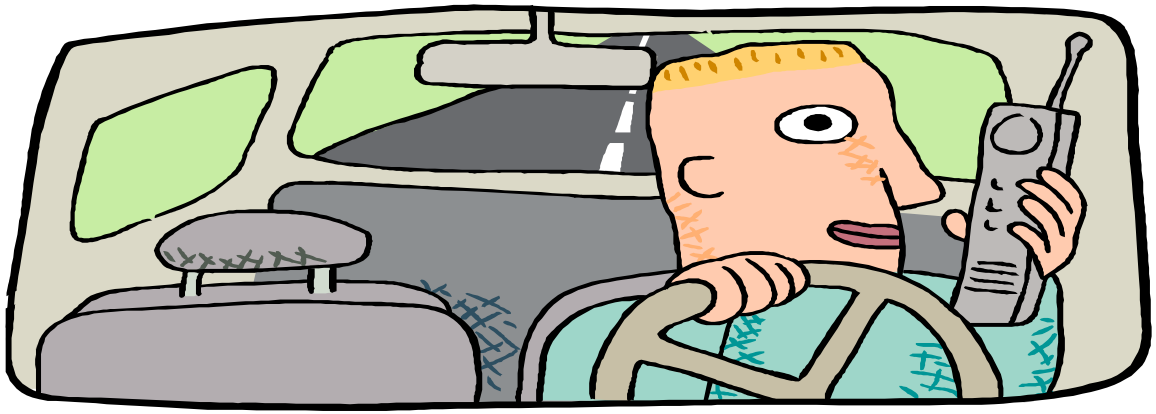
- Current Scope
- Future Opportunity
- Outside of Scope

Attributes

- Products
- Features
- Users
- Locations

Function vs. Feature

Product	Key Product Deliverables	Features
◆Car ◆Website	◆Engine, wheels, steering wheel ◆Database, user interface, navigation	◆CD player, power steering, air conditioning ◆Streaming audio or video



Future Opportunities

Current Scope	Future Opportunity	Recommended Scope Adjustment
New house	Swimming pool	Piping sized to accommodate future pool

Outside of Scope

Outside of Scope	Rationale
Exterior fence	Will be handled under a separate contract with a fencing specialist

Summary Milestones

- Summary milestones are typically the big milestones that senior managers track.
- Referred to as “summary” milestones because you roll up the detail in order to produce progress reports regarding the achievement of the milestone.

Preliminary Scope Exercise

- Complete the Preliminary Scope Statement section of the Project Charter
- Timing: 20 minutes

Impact Assessment Template

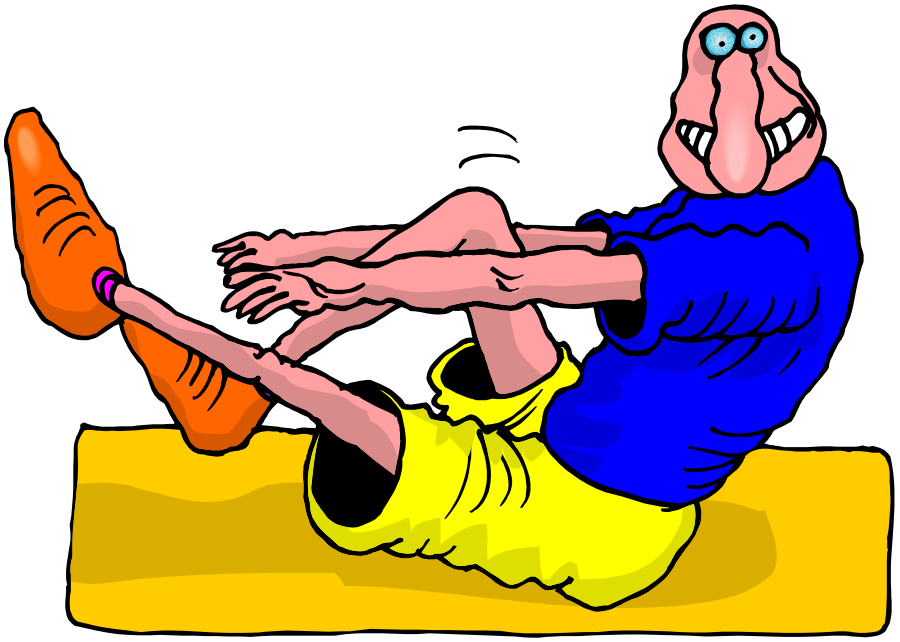
System, Process, Project	Nature of Impact	Owner	Action Required	Due

Deadline

- Deadline
  - Is there a deadline for this project?
  - What are the reasons for this deadline?
  - What happens if we miss the deadline?
  - What trade-offs are possible?

Impact Assessment & Deadline Exercise

- Working as a team, complete the Impact Assessment and Deadline sections of the Project Charter Template.
- Timing: 15 minutes



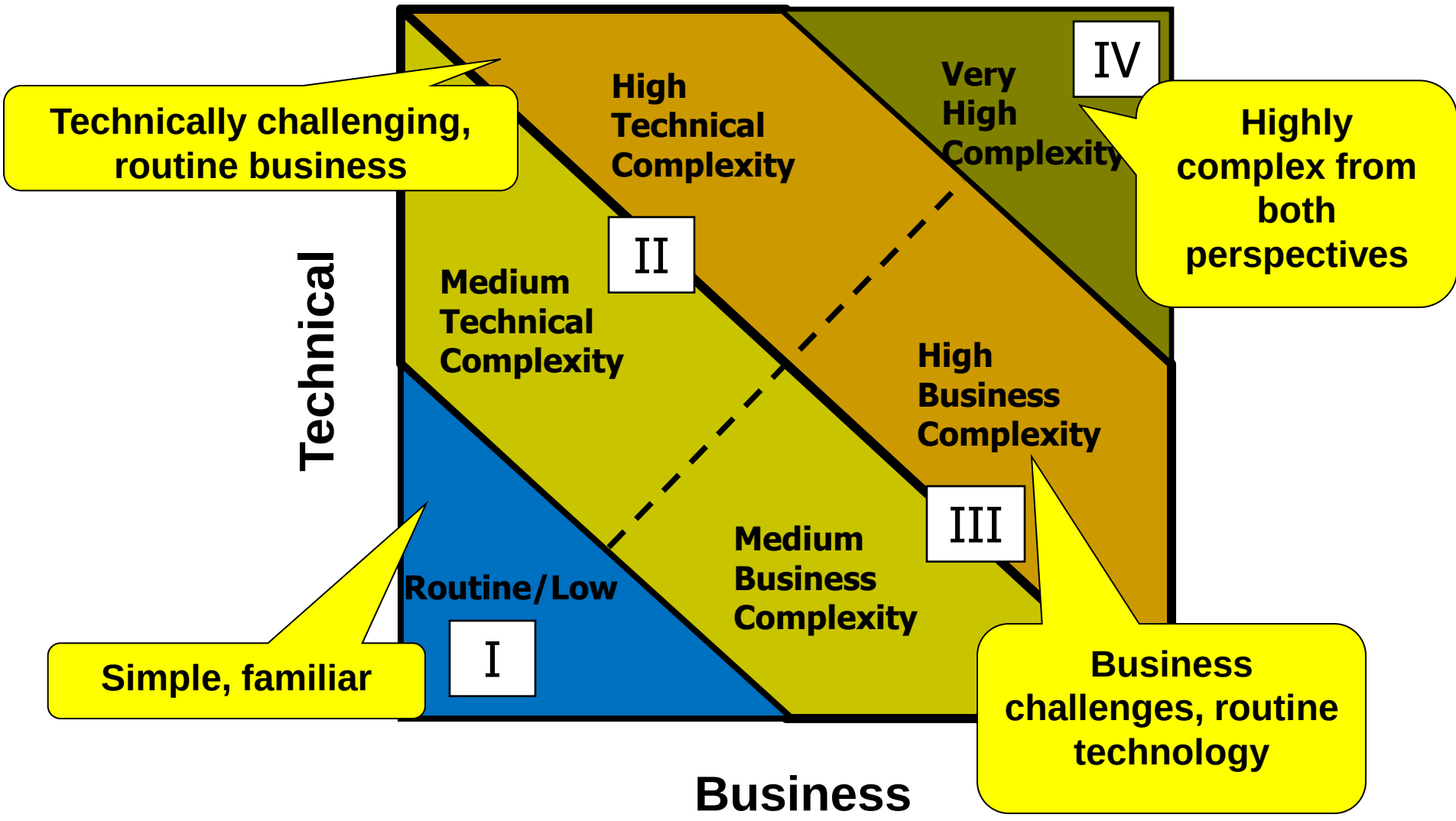
Business Complexity Template

Low Complexity 0 1	Business Attribute 2 3	High Complexity 4	Rating
Static	**Business rules**	Changing	0
Static	**Current Business Systems**	Changing	0
Known and Followed	**Decision Making Process**	Not Known	0
Low	**Financial Risk to State**	High	0
Local	**Geography**	State Wide	0
Clear and Stable	**High Level Requirements**	Vague	0
Few & Routine	**Interaction with Other Departments and Entities**	Many and New	0
None	**Impact to Business Process**	High	0

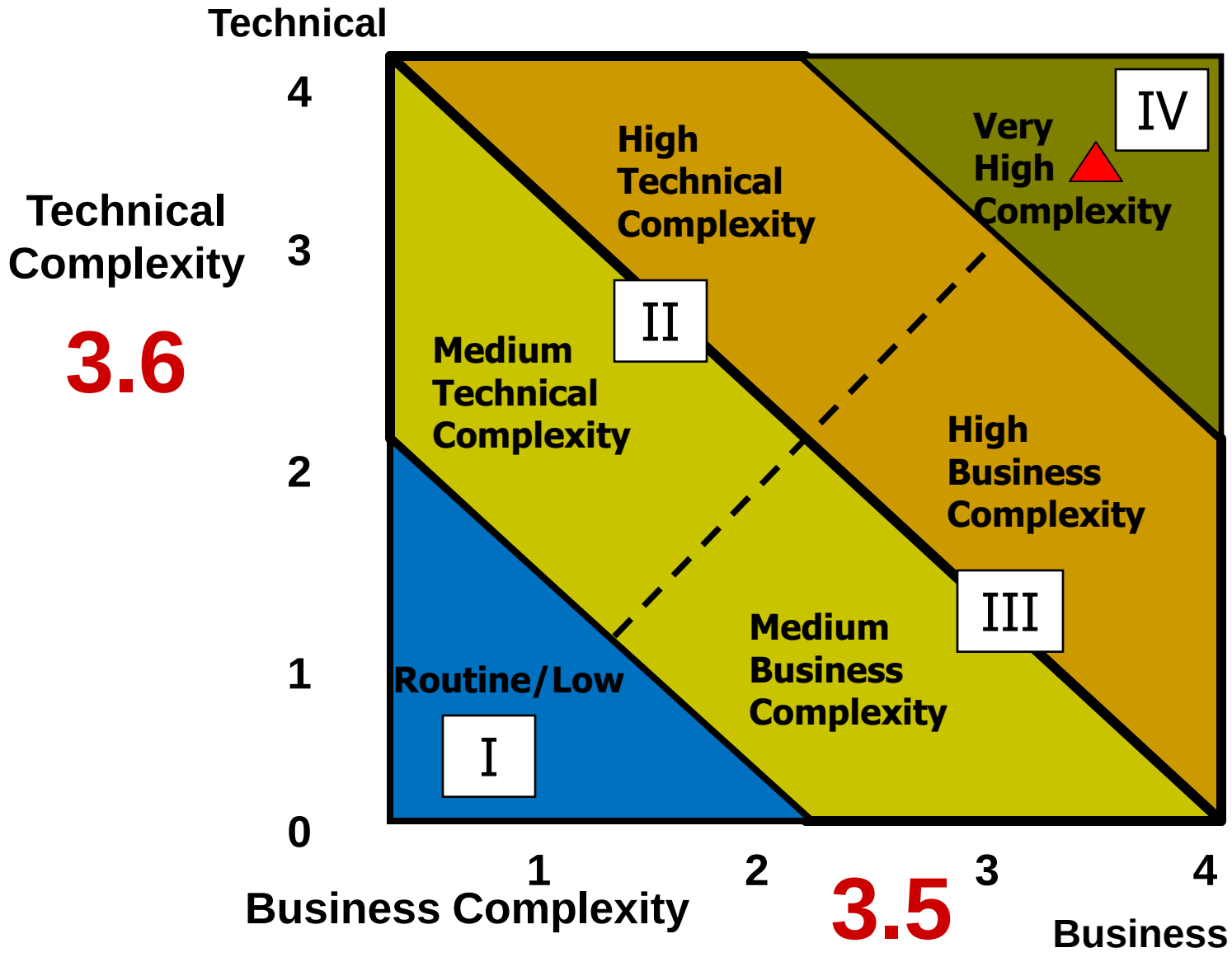
Technical Complexity Template

Low Complexity 0 1	Technical Attribute 2 3	High Complexity 4	Rating
Local	**Communications**	State wide	**0**
Established	**Delivery Mechanism**	New	**0**
Local	**Geography**	State wide	**0**
Proven	**Hardware**	New	**0**
Stand-alone	**Level Of Integration**	Tightly Integrated	**0**
Proven/Stable	**Networks (L/W)**	New	**0**
In place	**New Technology Architecture**	Not in place	**0**
9-5, Mon-Fri	**Operations**	24-hour, 7-day	**0**
Expert	**PM Technical Experience**	Novice	**0**
Established and in use	**Scope Management Process**	None	**0**
Light	**Security**	Tight	**0**
Proven	**Software**	New	**0**
Established and In Use	**Standards And Methods**	None	**0**
Experienced	**Team**	Inexperienced	**0**
High	**Tolerance To Fault**	Low	**0**
Low	**Transaction Volume**	High	**0**

Complexity Zones

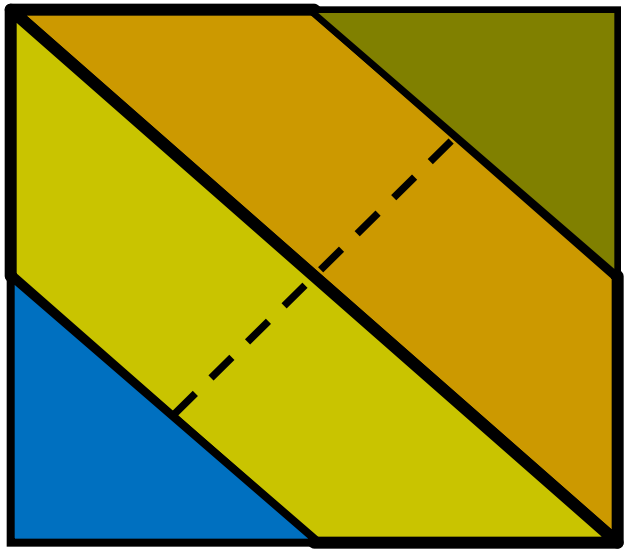


Project Complexity Example



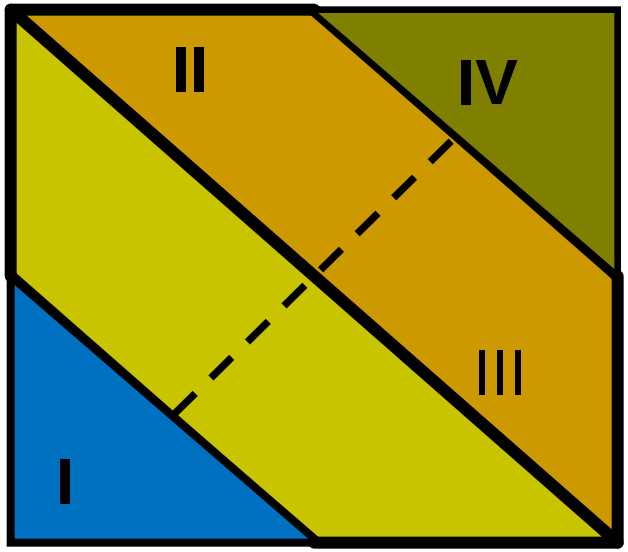
Complexity Analysis Exercise

- Complete the Complexity Analysis for your project.
- Plot your project's complexity on the instructor's graph (flip chart)
- Timing: 20 minutes



Project Complexity Analysis

- Staffing decisions
- PM assignment
- Project portfolio
- Budget reserve



Suggested PM Skill Set Guidelines

Complexity		Duration		Budget		Resources	
◉	Zone 1	◉	< 6 months	◉	<$500K	◉	< 5
○	Zone II, Medium Zone III, Medium	○	< 1 year	○	<$1M	○	<10
○	Zone II, High Zone III, High	○	>1 year; < 3 years	○	>$1M; <$5M	○	11 – 20
○	Zone IV	○	>3 years; <10 years	○	>$5M; <$100M	○	21 – 40
		○	>10 years	○	>$100M	○	40+

PM Level: Novice

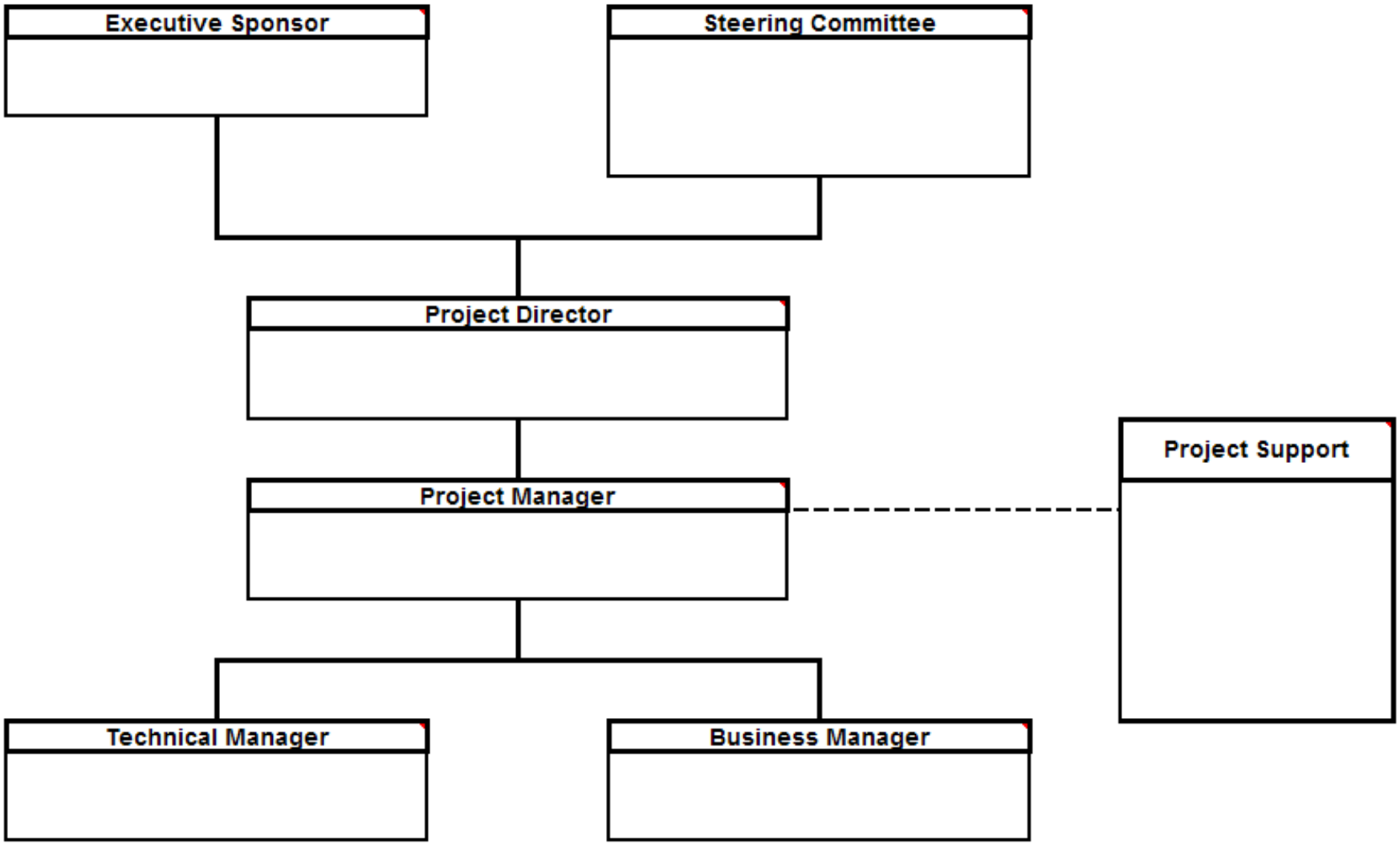
Experience: Minimum 1 year working as a key team member on an IT project. Technical experience commensurate with the proposed technology.

Professional Knowledge: Understands the CA-PMM and department's methodology.

Oversight

For Oversight Purposes:
Zone I = Low Criticality/Risk
Zones II and III = Medium Criticality/Risk
Zone IV = High Criticality/Risk

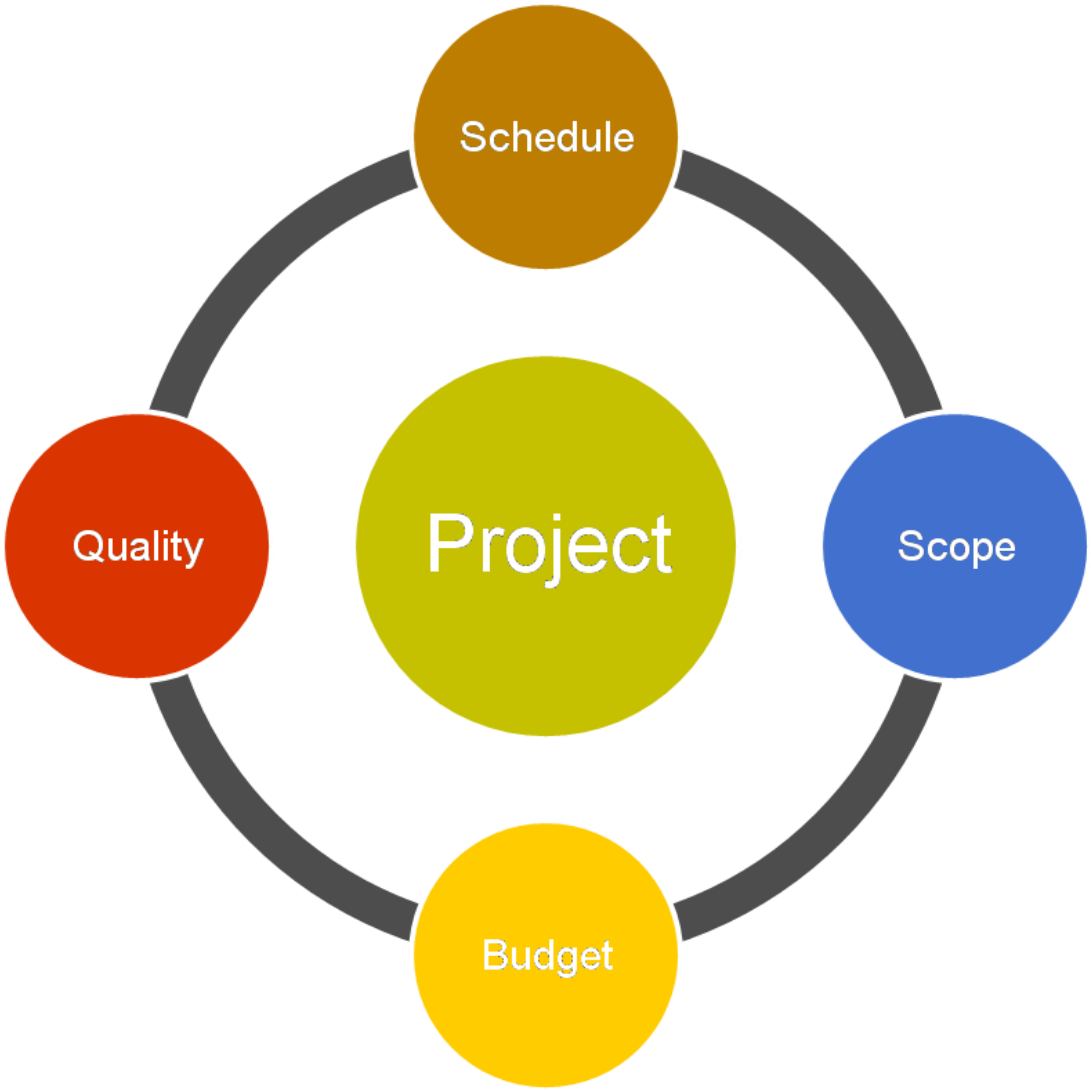
High-Level Project Organization



High Level Project Org. Exercise

- Complete a High Level Project Organization Template for your project
- Provide the individual or group names who will be filling the appropriate roles
- Timing: 10 minutes

Priority Analysis



Definition of Quality

- Be sure you have a good understanding of “quality”
- Different stakeholders may have different definitions of quality
- Discuss quality with your customers and quality assurance group
- Develop a master list of quality attributes for the types of projects your organization undertakes
- Tailor it to individual projects

Multiple Stakeholder Priorities

- **Step 3** - Use appropriate information to move stakeholders toward a common view of the Project priorities.

	Sponsor	Key Stakeholder	Key Stakeholder	Key Stakeholder	Final Ranking
Schedule	3	2	3	3	?
Scope	2	3	2	4	?
Budget	1	4	4	2	?
Quality	4	1	1	1	?

Multiple Stakeholder Priorities

- **Step 3** – cont.
  - When there is no common view, determine who is the most influential stakeholder and if their priorities should prevail.
  - If this is not practical, the sponsor will decide on the priority of the rankings.

	Sponsor	Key Stakeholder	Key Stakeholder	Key Stakeholder	Final Ranking
Schedule	3	2	3	3	3
Scope	2	3	2	4	4
Budget	1	4	4	2	2
Quality	4	1	1	1	1

Project Priorities - Thresholds

1. **Scope** – The minimal scope that must be delivered
2. **Budget/Cost** – The maximum amount of money the customer is willing to spend
3. **Schedule** – The latest the project must be finished and implemented
4. **Quality** – The level of quality below which the product will be unacceptable

Project Priorities

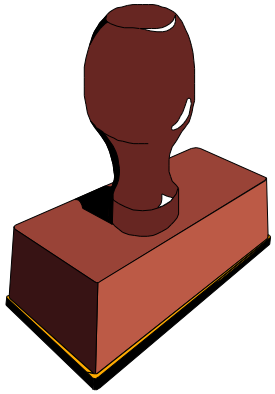
If Priorities change, be sure to maintain the equilibrium among the four project attributes.

Project Priorities Exercise

- Complete the Project Priorities Template for your project.
- Timing: 20 minutes

Assumptions & Risks

- Assumptions
- Constraints
- Procurement assumptions
- Known risks
- Runaway triggers
- Shutdown conditions



VERIFY ASSUMPTIONS!

Exercise

- Complete the Assumptions and Risks section of the Project Charter
- Timing: 20 minutes

Stakeholder Management …

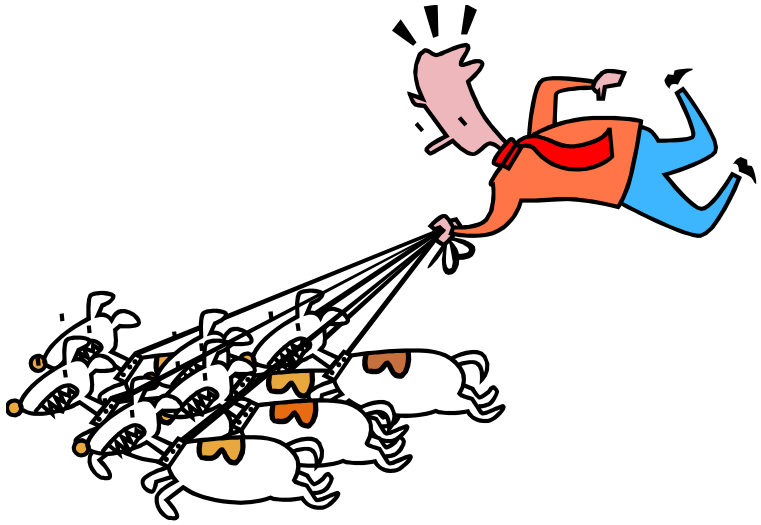
- A stakeholder:
  - Is actively involved in the project
  - Has interests that may be affected by the project's outcome
  - Might exert influence over the objectives or outcome

… Stakeholder Management

- Project managers must proactively:
  - Identify the stakeholders
  - Determine requirements and expectations
  - Determine communication requirements
  - Manage the stakeholders' influences relative to requirements

Organizational/Functional Stakeholders

- Identify all stakeholders
- Vested Interest
- Assess their level of support
- Readiness
- Tolerance for Change
- Training Needs
- Other needs



Org/Functional SH Template

Stakeholder	Interest	Support	Readiness	Tolerance For Change	Training Needs	Other Needs
Mike Jones	needs system to support hiring	In Favor	Not Ready	High	learning system orientation	none
Functional Managers	changes existing process	In Favor	Not Ready	Medium	learning system technical training	increased RAM

Exercise

- Complete the Organizational/Functional Stakeholder Analysis for your project.
- Timing: 20 minutes

Issue Management

- PMBOK® Guide, Third Edition - *A point or matter in question or in dispute, or point or matter that is not settled and is under discussion or over which there are opposing views or disagreements.*

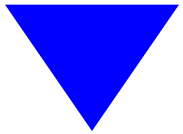
- Manage:
  - Keep a log
  - Set a resolution date
  - Communicate resolution to stakeholders

Planning

Planning

Planning

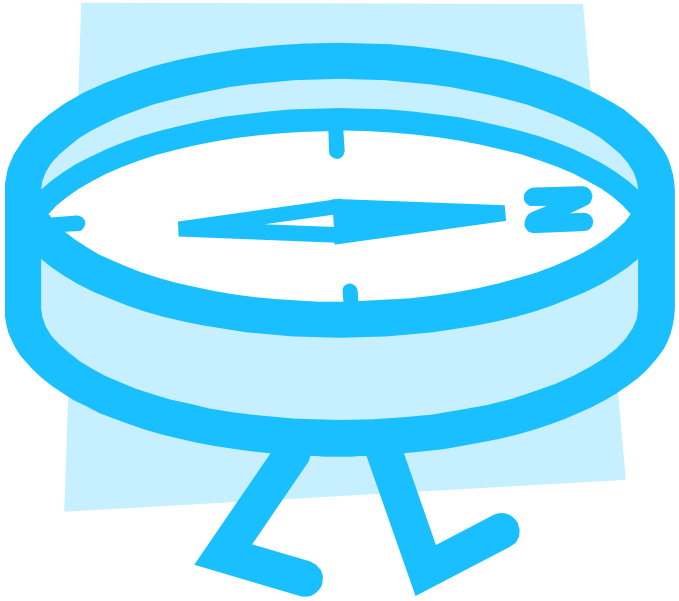
5. Project Management Plan:
6. Organizational Change Management Plan
7. Maintenance and Operations Plan



Project Management Plan

Project Management Plan Sub-Plans

- Scope Management Plan
- Configuration/Change Control Plan
- Schedule (Time) Management Plan
- Human Resources Management Plan
- Communication Management Plan
- Risk Management Plan
- Cost Management Plan
- Quality Management Plan
- Procurement Management Plan
- Contract Management Plan



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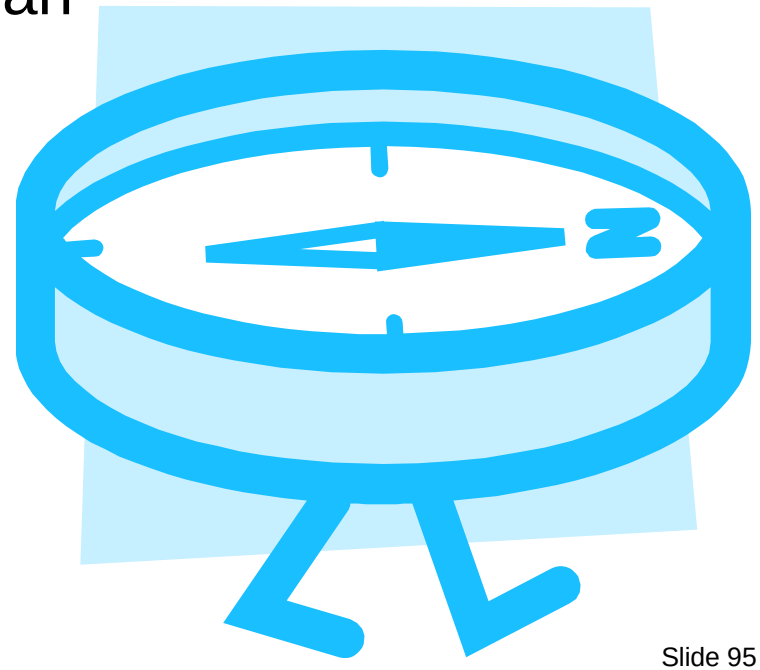

Scope Management Plan

- Project Scope Management Plan includes:
  - Process used to develop a detailed scope statement
  - Process used to develop a WBS
  - Project Scope Statement (updated)
  - Process used to evaluate scope changes
  - Scope Change Request

Scope Change Request Template

Change Request
Change Request #
Description:
Category:
Benefits:
Impact:
Risk:
Approval:

Project Management Plan Sub-Plans

- Scope Management Plan
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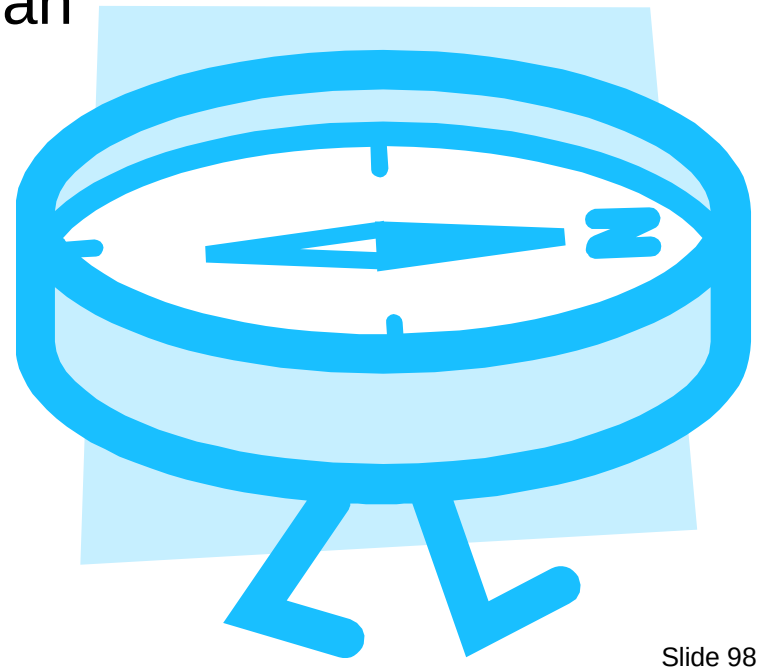

Configuration/Change Management

Purpose:

- To mange change to the project's baselines for scope, schedule, cost, and quality
- To manage change across the various planning documents to ensure that direct and indirect impacts are addressed
- To manage the storage, handling, and disposition of project media (both automated and paper)

Project Management Plan Sub-Plans

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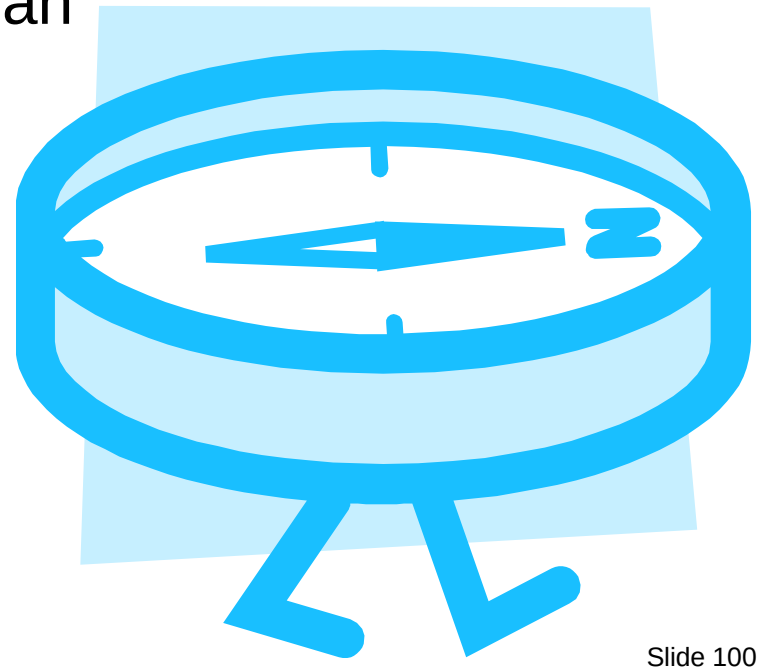
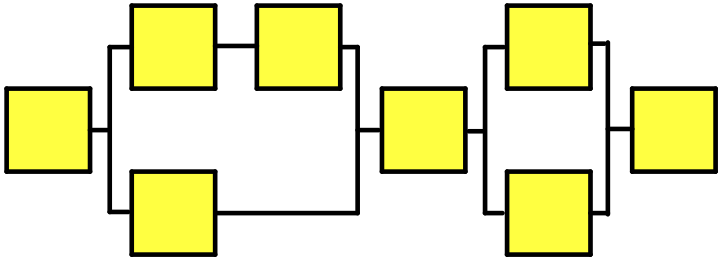
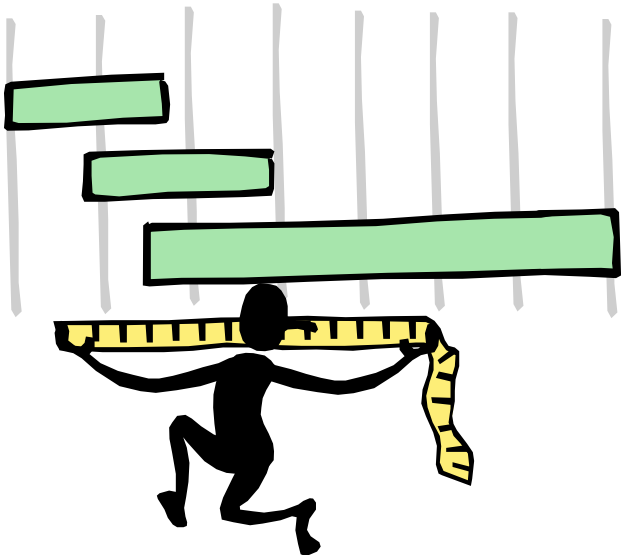


Schedule (Time) Management

- Defines how we will manage the schedule:



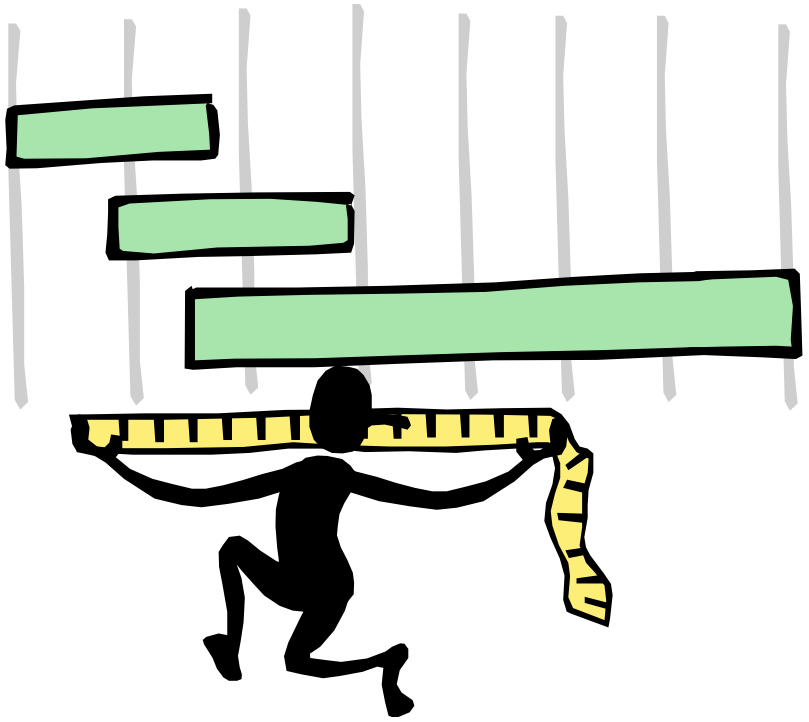


Activity Resource Estimating

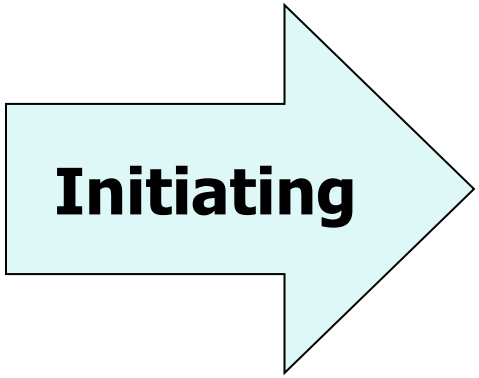
- Estimating the types and quantities of the resources needed to complete each activity:
  - Human resources
  - Material
  - Equipment
  - Consultants

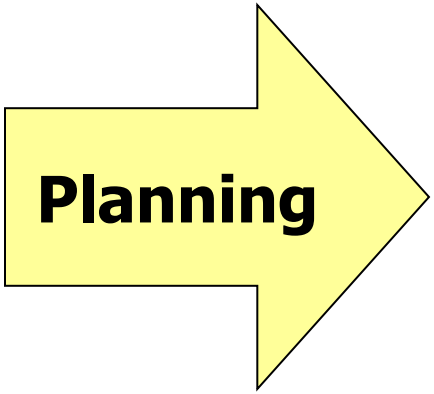
Activity Duration Estimating

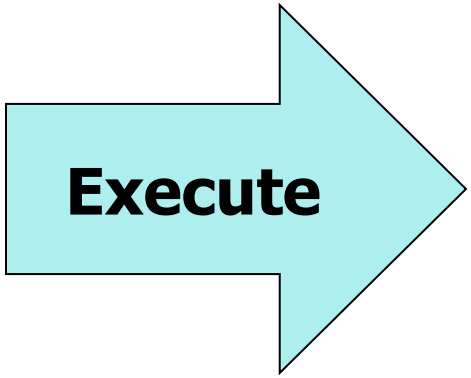
- How would you like your boss to describe your estimates?



Accuracy







As we progressively elaborate what we know about the project, the ranges of our estimates get smaller!

- 50 - +100%

-10 - +15%

Estimating Fundamental

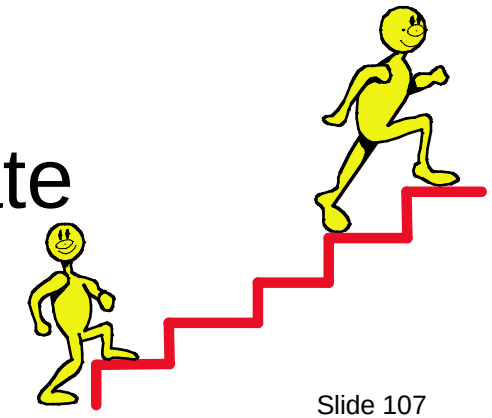
- Effort: the amount of work expressed in hours
  - Effort-driven activities will require a longer or shorter duration as the effort increases or decreases.
- Duration: the number of work days, weeks, or months to complete the effort
  - Duration-driven tasks do not expand or contract regardless of the number of resources participating.

How Do You Get Estimates?

- Ask the person to whom the task is assigned
- Project manager estimates
- Gather a representative group
- Historical data

6 Steps To Activity Duration Estimating

- Step 1 – WBS Review
- Step 2 – Network Diagram Review
- Step 3 – Baseline Effort Estimate
- Step 4 – Resource Profile
- Step 5 – Effort Estimate
- Step 6 – Activity Duration Estimate



Activity Duration Estimate Worksheet

Activity Duration Estimate Worksheet

Formula for Duration Estimate

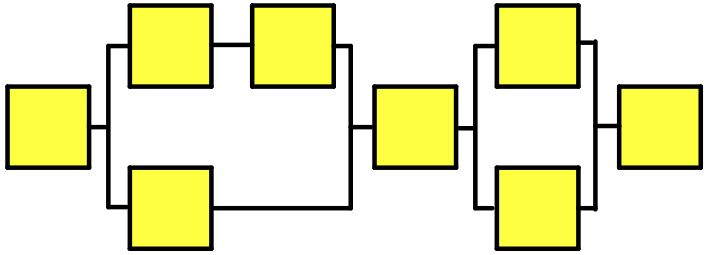
	BE	X				EVF =	BE X EVF = EE	EE/ Hrs Work Day	= DE *days*
Activity	**Hrs**	**Resources**	**SF ***	**WIF ***	**MPF ***	**PPIF =**				
Write Report	**4**	**Sue**	**1.5**	**1.43**	**1.18**	**1.15**	**2.9**	**12**	**8**	**1.5**

Step 1 – WBS Review

- Review the most recent WBS and revise as necessary
- Be sure to include a detailed activity list for each deliverable

Step 2: Project Schedule Network Diagram

- Depicts the relationships among activities and milestones
- Shows the order in which various activities can be undertaken



Step 3: Baseline Effort

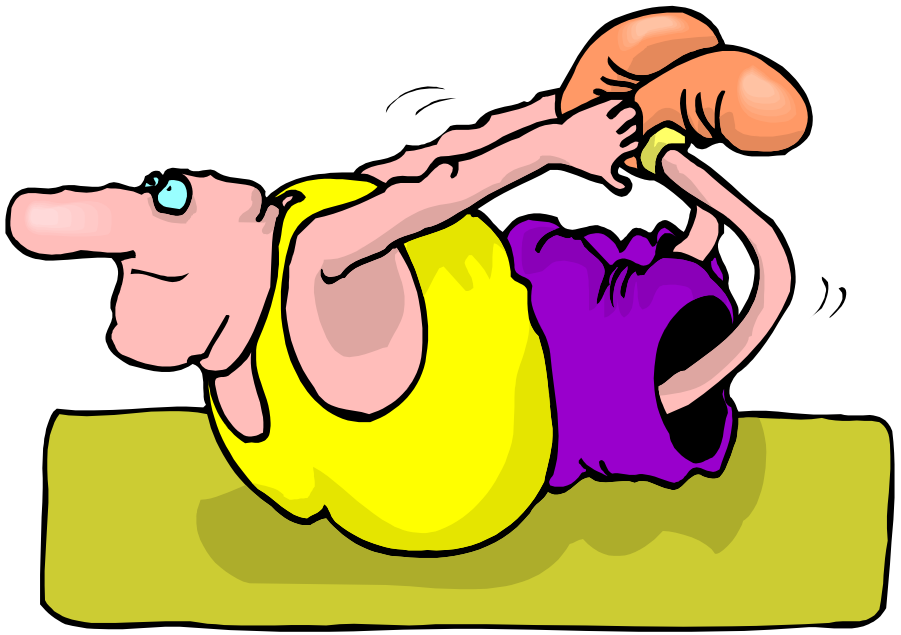
- Proficient
- No interruptions
- Full-time assignment to the project
- Optimal work environment

Step 3: Baseline Effort Example

No.	Activities	Baseline Estimate Hours
1.	***Build user interface***	***16***
2.	***Test user interface***	***4***
3.	***Fix bugs in user interface***	***8***

Step 3: Baseline Effort Exercise

- Enter the activities from your network diagram designated by your instructor onto the Activity Duration Estimate Worksheet
- Estimate the baseline effort (BE) for each activity listed
- Timing: 15 minutes



Step 4: Resource Profile

- Resource Profiling
  - Skill Level
  - Work Interruption
  - Multi Project Assignment
  - Project Productivity Environment

Step 4: Skill Level

- Proficient
  - Fully experienced, subject matter expert
- Competent
  - Competent in skills, solid knowledge of subject, good experience
- Learner
  - Basic competencies, some subject knowledge, little experience
- Novice
  - Some subject knowledge, extensive training needed, good work habits

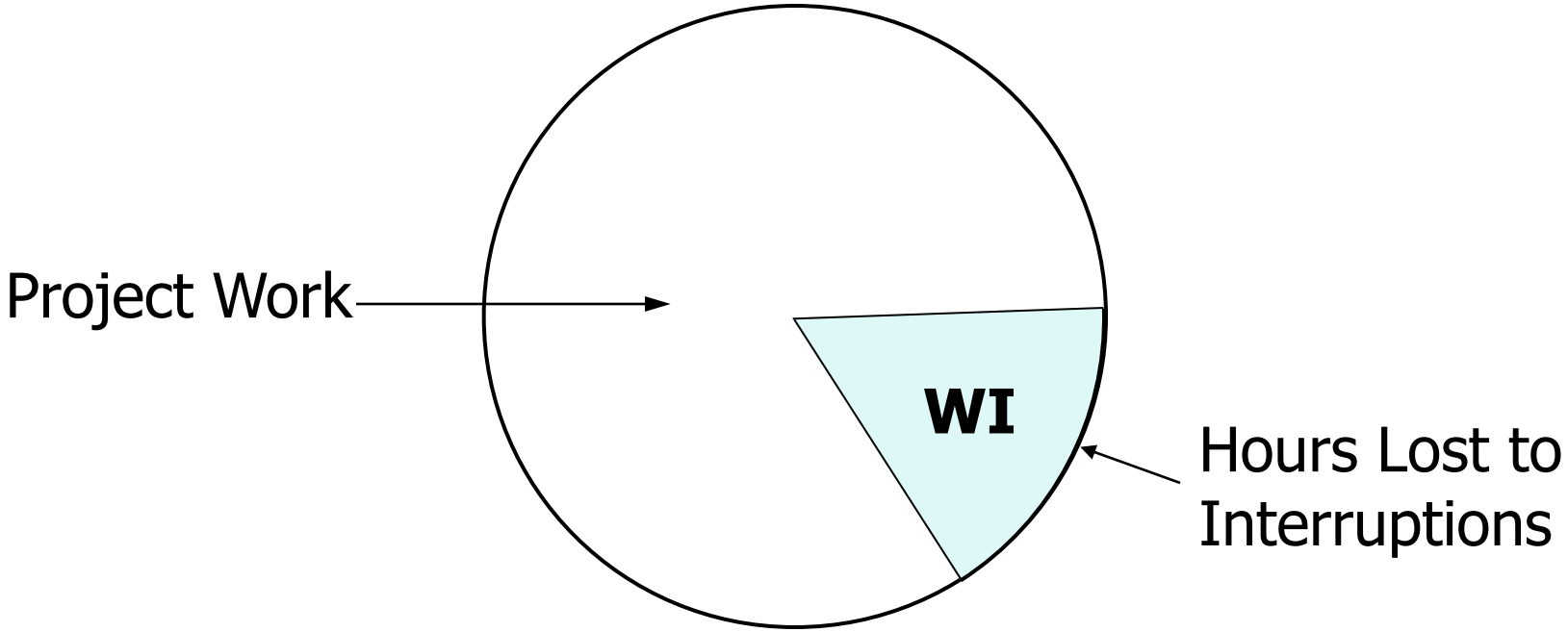
Step 4: Skill Factor Categories

Skill Level	Description	SF
Proficient: Level 1	Fully experienced, subject matter expert	1
Proficient: Level 2	Fully experienced, extensive subject matter knowledge	1.1
Proficient: Level 3	Extensive subject matter knowledge, some learning curve required	1.2
Competent: Level 1	Competent in all task-related skills, solid knowledge of subject, good experience	1.4
Competent: Level 2	Competent at similar tasks, solid subject knowledge, some learning curve required	1.5
Competent: Level 3	Competent at basic skills for the task, mid-range subject knowledge, some experience	1.75
Learner: Level 1	Possesses basic competencies for the task, some subject knowledge, little experience	2

Step 4: Work Interruption Factor (WIF)

- Time lost due to interruptions
- Interview team member
- Interview team member manager
- Historical data

Step 4: Work Interruption

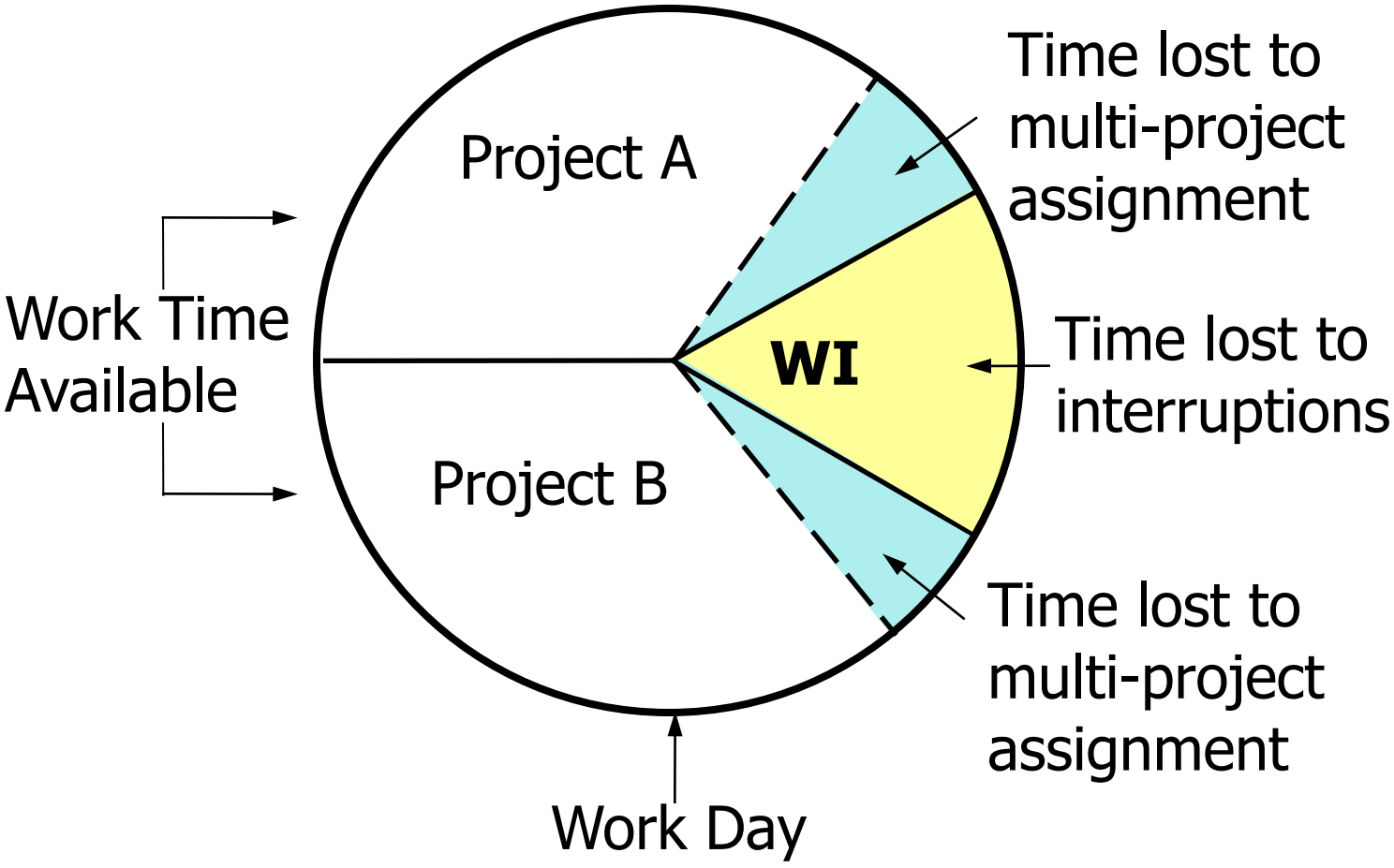


$$WIF = \frac{100}{100 - \text{Percent of Time Lost Due to Interruptions}}$$

Step 4: WIF

Percentage Lost Due to Interruption	WIF
5	*1.05*
10	*1.11*
15	*1.18*
20	*1.25*
25	*1.33*
35	*1.54*
45	*1.82*
50	*2*
75	*4*

Step 4: Multi Project Assignment



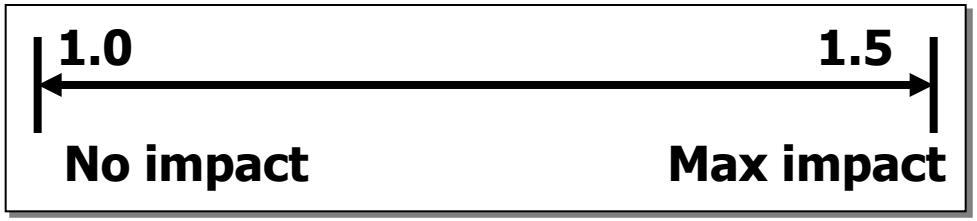
Step 4: Calculating MPF

% Lost Due to Multi-Project Assignment	MPF
10%	1.11
15%	1.18
20%	1.25

$$\text{MPF} = \frac{100}{100 - \%\ \text{of Time Lost Due to Switching Between Projects}}$$

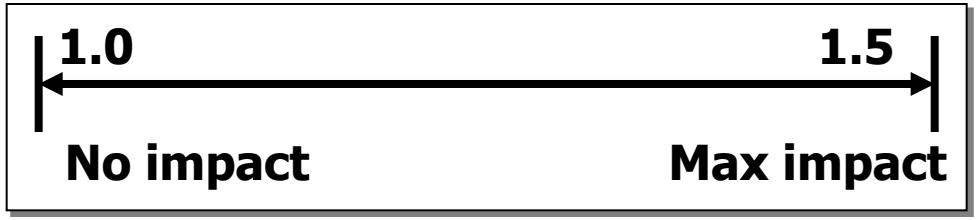
Step 4: Project Productivity Environment

- Team size
- Team location
- Tool stability
- Vendor support



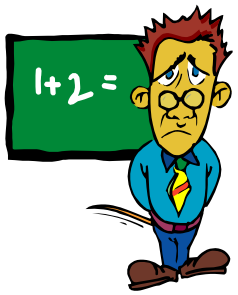
Step 4: Project Productivity Environment

- Project duration
- Number of nemeses
- Turnover rate
- Team synergy
- Team-client synergy



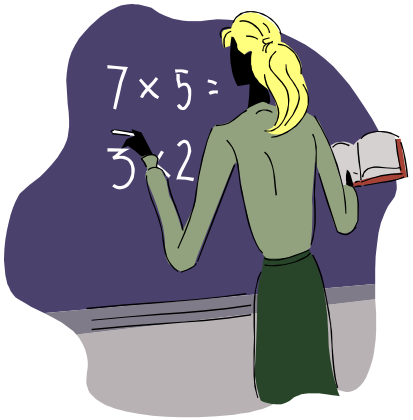
Step 4: PPIF

Project Productivity Influencing Factors	Range: 1 to 1.5
Team Size	**1.2**
Team Location	**1.5**
Tool Stability	**N/A**
Vendor Support	**1.1**
Project Duration	**N/A**
Number of Nemeses	**1.1**
Turnover Rate	**N/A**
Team Synergy	**1.1**
Team-Client Synergy	**1.2**
Total	**7.2**
Number of Factors	**6**
PPIF =	**1.2**



Step 4: Effort Variance Factor

- Skill Factor (SF)
- Work Interruption Factor (WIF)
- Multi-Project Factor (MPF)
- Project Productivity Influencing Factor (PPIF)



Step 4: EVF Formula

SF	*	WIF	*	MPF	*	PPIF	=	EVF
1.50	*	*1.33*	*	*1.18*	*	*1.20*	=	*2.8*

Activity Duration Estimate Exercise

- Assign each activity for which you have a Baseline Effort Estimate to someone on the team
- Develop EVFs for each team member based on the activities to which they are assigned
- Timing: 20 minutes

Step 5: Effort Estimate

Baseline	*	EVF	=	Effort Estimate
6 hrs	*	*2.8*	=	*17 hrs**

Round up to the nearest whole number

Step 6: Activity Duration Estimate

Activity	BE	Resource	*	EVF	=	EE	÷	Activity Hrs./ Work Day	=	DE
Write Report	4	Sue	*	2.9	=	12	÷	8	=	1.5
Enter Data	6	Bill	*	5.1	=	31	÷	4	=	8

Estimating Exercise

- Complete the Activity Duration Estimate Template for your project
- Write the duration of and the initials of the resource assigned to each activity (and lag) on the appropriate Post-It®
- Timing: 10 minutes

Project Management Plan Sub-Plans

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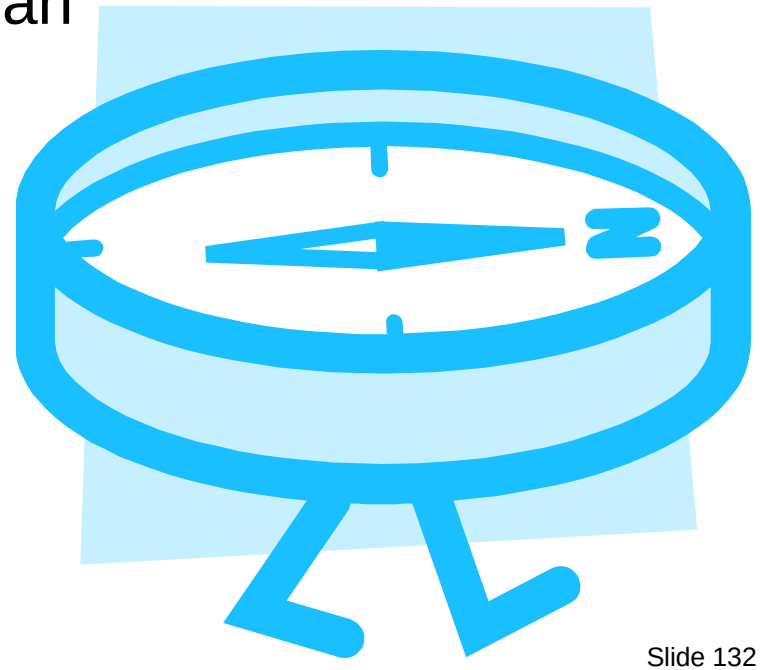


Human Resource Plan

- Identifying and documenting project roles, responsibilities, and reporting relationships

- Outputs:
  - Project organization charts
  - Staffing management plan
  - PASI
  - Project Management roles and responsibilities

Staffing Management Plan Exercise

- Using the Project Organization Chart, identify the key roles needed
- Complete the Staffing Management Plan Section of the Human Resources Plan worksheet
- Timing: 15 minutes

Determine Required Skill/Level

- Proficient
  - Fully experienced, subject matter expert
- Competent
  - Able, good experience, solid knowledge
- Learner
  - Little experience, some knowledge
- Novice
  - Extensive training required

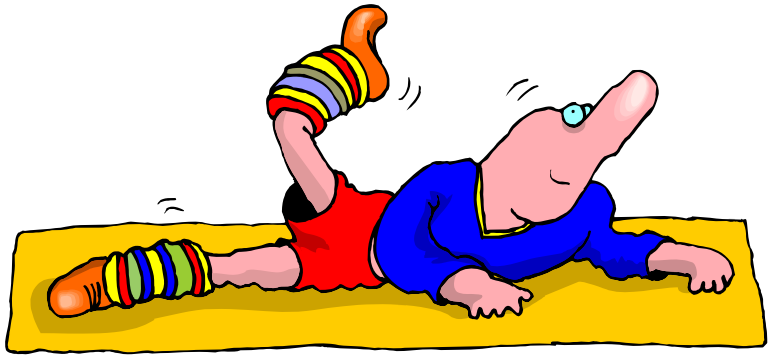
Required Skills and Skill Level

Role: *Instructor*	Source: *Training Dept.*
Resource Name: *Dennis*	When Needed: *Aug 1 – Nov 30*

Required Skills	Skill Level Required				Actual Skill Level	Skill Gap Plan
	1	2	3	4		
	Proficient	Competent	Learner	Novice		
Facilitation	**X**				**2**	Mentor
Presentation Skills		**X**			**3**	Coaching sessions
Knowledge of Subject		**X**			**1**	N/A

Required Skills Exercise

- Choose two of the roles you have identified
- Complete the Required Skills template for both roles
- Timing: 15 minutes



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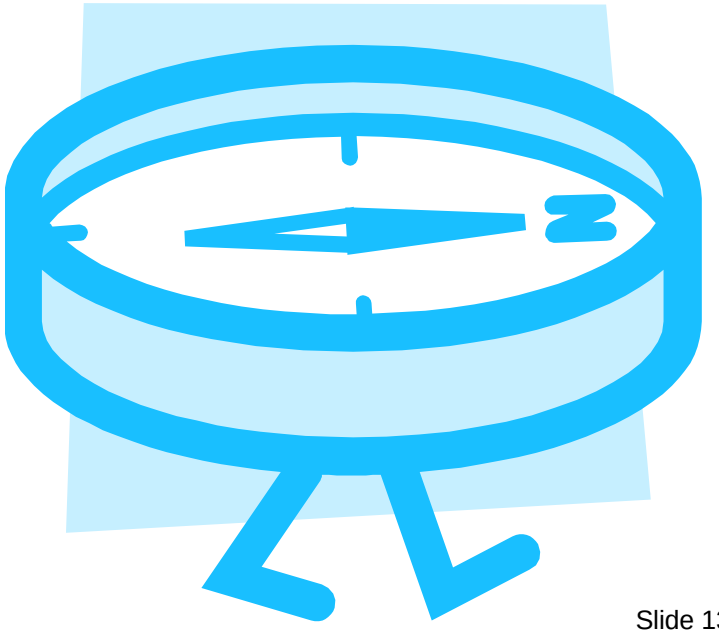
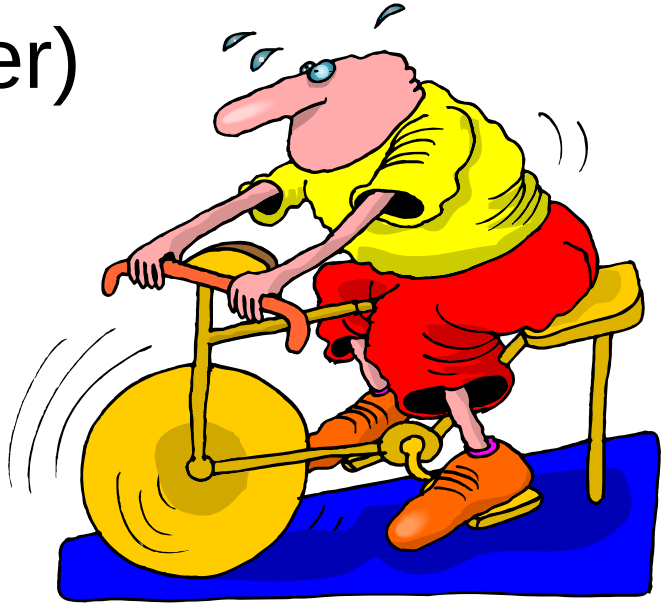


Communication Plan

- Review the communication needs of your project
- Complete the Communication Plan Template
- (Internal and External Stakeholders and Recurring Meeting Planner)
- Timing: 20 minutes



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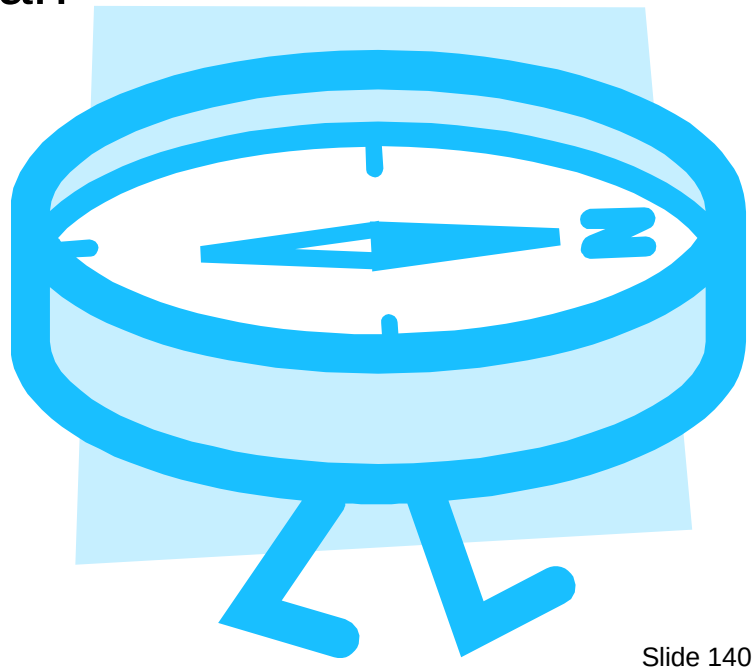


Simple Probability and Impact Scales

- Scale: 1(low) – 5 (high)

Probability Scale	
1	< 20% chance
2	20 – 40% chance
3	41 – 60% chance
4	61 – 80% chance
5	>80% chance

Impact Scale	
1	Less than 5% change to schedule, scope, budget, or quality
2	5 – 10% change to schedule, scope, budget, or quality
3	11 – 15% change to schedule, scope, budget, or quality
4	16 – 24% change to schedule, scope, budget, or quality
5	25% change to schedule, scope, budget, or quality

Note: Risk probability of 85+ percent is considered fact (constraint) and should be included in planning!!!

Timing Scale

Within the next six months	1
From six months to a year from now	.66
Over a year from now	.33

Risk Register

Risk	Prob. (1-5)	*	Impact (1-5)	*	Timing	=	Risk Level (1-25)
Audit & Control Needs	3	*		*		=	
Budget	2	*		*		=	
Customer Sophistication	4	*		*		=	

Risk Register

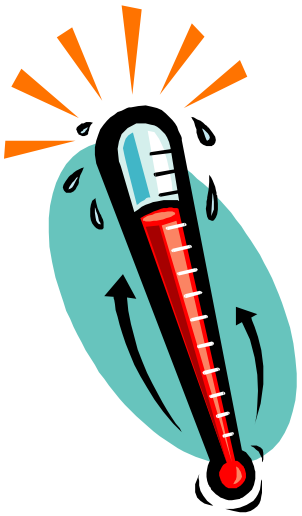
Risk	*Prob. (1-5)*	*	*Impact (1-5)*	*	*Timing*	=	*Risk Level (1-25)*
Audit & Control Needs	*3*	*	*5*	*		=	
Budget	*3*	*	*4*	*		=	
Customer Sophistication	*5*	*	*5*	*		=	

Risk Register

Risk	*Prob. (1-5)*	*	*Impact (1-5)*	*	*Timing*	=	*Risk Level (1-25)*
Audit & Control Needs	*3*	*	*5*	*	*.66*	=	*10*
Budget	*3*	*	*4*	*	*1*	=	*12*
Customer Sophistication	*5*	*	*5*	*	*.33*	=	*5*

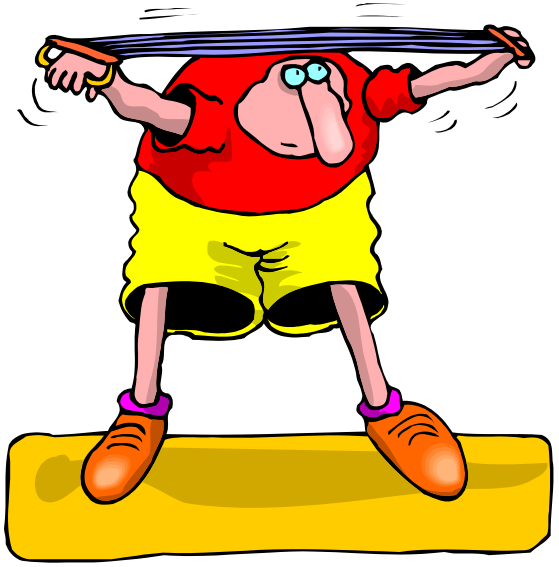
Risk Threshold

- 1-9
  - Low-level risk
- 10-15
  - Medium-level risk
- 16-25
  - High-level risk



Risk Id./Qaul. Analysis Exercise

- Working as a team, use the Risk Register to identify and rate the potential risks to your project:
  - Complete the “Probability” column
  - Complete the “Potential Impact” column
  - Calculate the risk levels
- Timing: 15 minutes



Risk Response Planning

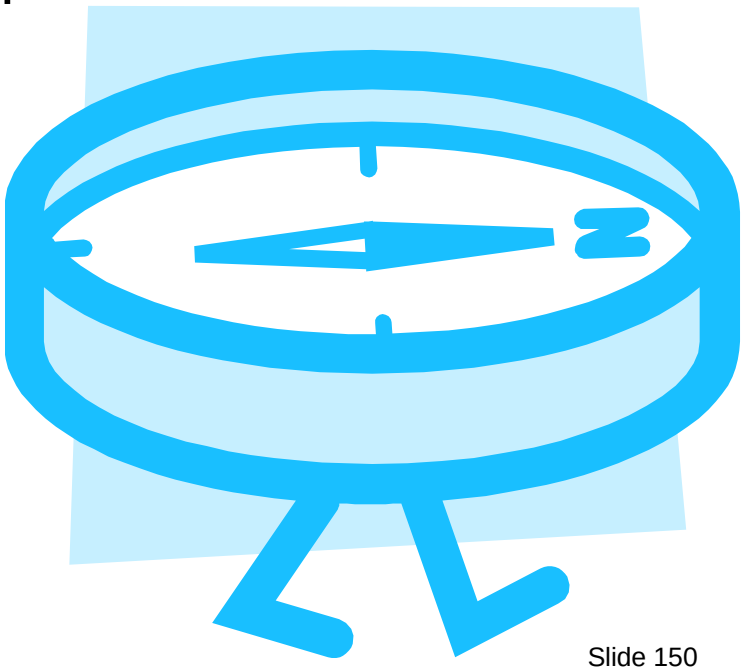
- Develop options and determine actions to manage risks

Risk Response Planning Exercise

- Working as a team, choose two risks that you have identified
- Use the Risk Register template to develop Risk Management Plans (Cause thru Owner columns)
- Timing: 20 minutes

Project Management Plan Sub-Plans

- Scope Management Plan
- Configuration/Change Control Plan
- Schedule (Time) Management Plan
- Human Resources Management Plan
- Communication Management Plan
- Risk Management Plan
- **Cost Management Plan**
- Quality Management Plan
- Procurement Management Plan
- Contract Management Plan



Cost Management

Cost Management Purpose:

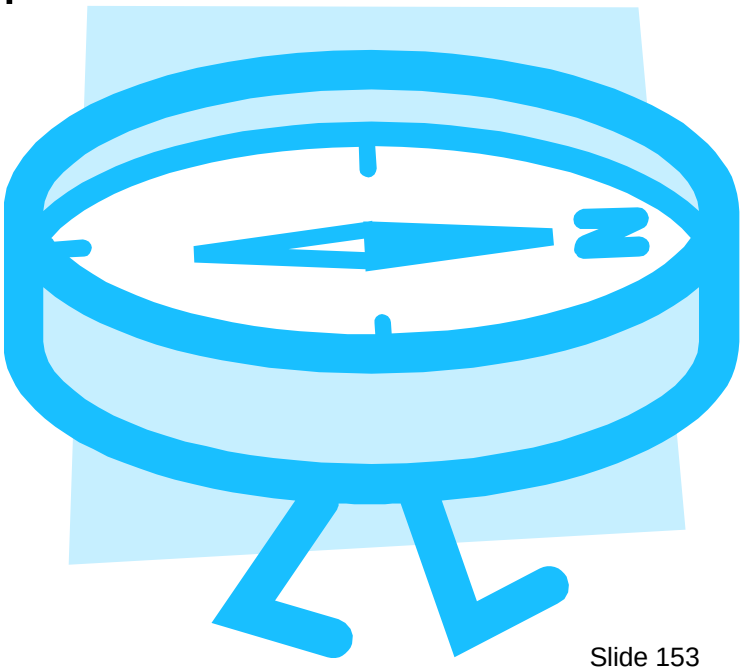
- To ensure that the project team and its contractors will complete the project within budget. Cost management also includes an analysis of options and issues to determine their potential effect on the project's budget and operations.

Exercise

- Refer to the Cost Management Plan Worksheet.
- Complete the following sections:
  - Cost Planning
  - Cost Tracking
  - Cost Metrics and Reporting
  - Cost Control and Changes
- Timing: 20 minutes

Project Management Plan Sub-Plans

- Scope Management Plan
- Configuration/Change Control Plan
- Schedule (Time) Management Plan
- Human Resources Management Plan
- Communication Management Plan
- Risk Management Plan
- Cost Management Plan
- **Quality Management Plan**
- Procurement Management Plan
- Contract Management Plan



Quality Management

- All the activities that determine quality standards, objectives, and responsibilities so that the project will satisfy quality requirements and produce a product that meets quality standards

PMBOK 3RD Edition

Exercise

- Complete the Quality Audit/Review section of the Quality Management Plan template for your project.
- Check your WBS to be sure that you have included all of the identified quality audits and/or reviews.
- Timing: 15 minutes

Project Management Plan Sub-Plans

- Scope Management Plan
- Configuration/Change Control Plan
- Schedule (Time) Management Plan
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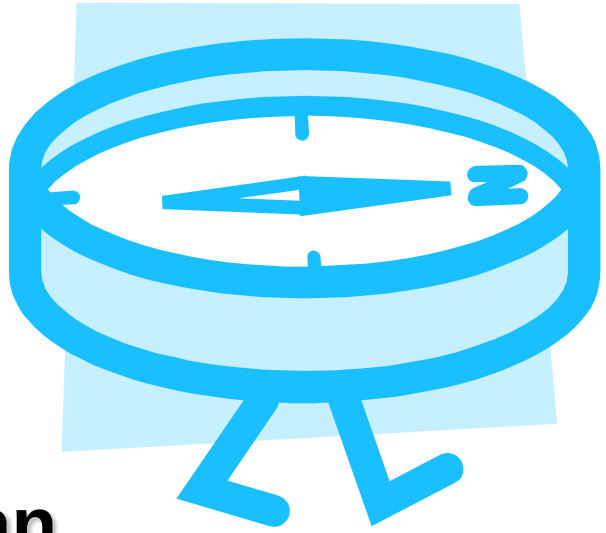
- **Procurement Management Plan**
- Contract Management Plan



Procurement Management

Procurement Management Purpose:

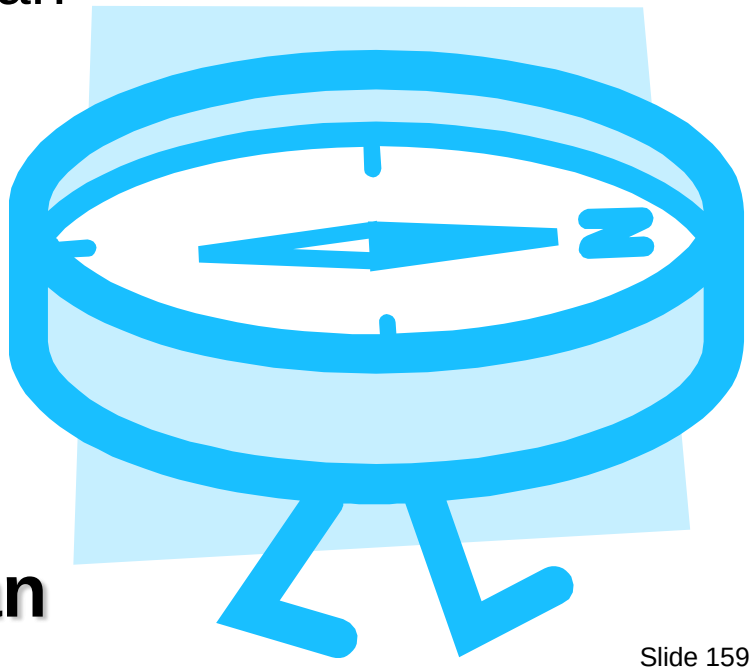
- To acquire goods and/or services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place, and from the right source—all used on the project via a contract

Procurement Plan Exercise

- Identify two items (goods or services) that will be acquired for your project
- Work those items through the Acquisition section of the Procurement Management Plan
- Timing: 15 minutes

Project Management Plan Sub-Plans

- Scope Management Plan
- Configuration/Change Control Plan
- Schedule (Time) Management Plan
- Human Resources Management Plan
- Communication Management Plan
- Risk Management Plan
- Cost Management Plan
- Quality Management Plan
- Procurement Management Plan
- **Contract Management Plan**



Contract Management

Contract Management Purpose:

- To ensure that contractors and suppliers are adhering to the terms and conditions of the contracts and providing the required services/products that meet the expectations of the project

Exercise

- Complete the Contractor Performance Management section of the Contract Management Plan.
- Timing: 15 minutes

Organizational Change Management

Organizational Change Purpose:

- To transition the people and processes impacted by the project from their current situation to the new situation
- To ensure that a new situation has been achieved and that it aligns with the strategic objectives of the organization and the project objectives

Exercise

- Complete the Organizational Change Management Plan for your project.
- Timing: 15 minutes

M & O Transition Plan

M&O Transition Plan Purpose:

- To ensure that maintenance and operations infrastructure is in place prior to the hand-off of the system, service, or product
- To facilitate the transfer of knowledge from the project team to the M&O team

M&O Transition Exercise

- Complete the M & O Transition Steps section of the Maintenance & Operations Transition Plan
- Timing: 10 minutes

Executing

California Project Management Methodology

Executing

8. **Deliverable Acceptance**
9. **Status Report**
10. **Project Management Plan Update**
11. **Benefit Validation**
12. **Customer Acceptance**
13. **Product Implementation**

Deliverables & Performance Data

Executing

- Purpose
  - Coordinating people and resources
  - Complete the work defined in the Project Management Plan
  - Meet the requirements
- Outputs
  - Deliverables
  - Timely information to stakeholders

Deliverable Acceptance Template

No.	Deliverable	Acceptance Criteria	Sign-off Authority
15	E-Templates	Content approved; fully functional; edited for spelling, grammar, and punctuation	G. Forrest
16	Slide deck	Notes pages complete; edited for spelling, grammar, and punctuation	G. Forrest
17	Curriculum	60/40 balance between lecture and activity; timing articulated; content coverts complete methodology	G. Forrest

Customer Acceptance

No.	Deliverable	Acceptance Criteria	Sign-off Authority	Meets Criteria	Action Required
15	E-Templates	Content approved; fully functional; edited for spelling, grammar, and punctuation	G. Forrest	☐ yes ☒ no	Correct error message XYZ
16	Slide deck	Notes pages complete; edited for spelling, grammar, and punctuation	G. Forrest	☒ yes ☐ no	none
17	Curriculum	60/40 balance between lecture and activity; timing articulated; content coverts complete methodology	G. Forrest	☒ yes ☐ no	none

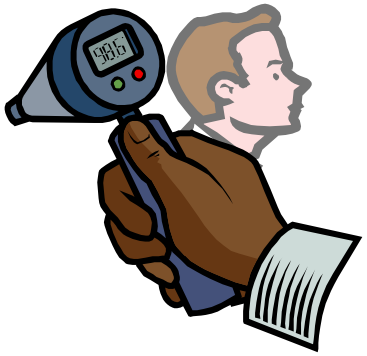
Exercise

- Complete the No. thru Acceptance Criteria columns of the Deliverable Acceptance Criteria template for your project.
- Timing: 15 minutes

Status Reports

- Team to project manager
- Project manager to sponsor
- Sponsor to Executive/Steering Committee

Monitoring the Vital Signs



Project Vital Signs

- Aggregate indicators of the overall health of a project

- 15 vital signs
  - Strategic
    - Strategy alignment, sponsorship, customer buy-in, technology viability, value-to-business, vendor viability
  - Tactical
    - Status of the critical path, milestone hit rate, deliverable hit rate, unresolved issues, cost-to-date, actual resources vs. planned resources
  - Environmental
    - High probability-high impact risks, overtime utilization, team disposition (effectiveness)

Project Vital Signs

✓	1. Customer buy-in
✓	2. Technology viability
✓	3. Status of the critical path
✓	4. Cost-to-date
✓	5. High probability, high impact risks
✓	6. Unresolved issues
✓	7. Sponsorship Commitment
	8. Strategy alignment

	9. Value-to-business
	10. Vendor viability
	11. Milestone hit rate
	12. Deliverable hit rate
	13. Actual resources vs. planned resources
	14. Overtime utilization
	15. Team Effectiveness

Vital Signs Indicators

- Green light 
  - All is well
  - Variance is acceptable
- Yellow light 
  - Caution, trouble ahead
  - The vital sign has reached a level at which it will begin to have a negative impact on the project
- Red light 
  - Danger, measurable impact on the project
  - May be beyond project manager's ability to recover

Benefit Validation

- Reality check
- If benefits are no longer valid, the project must be re-evaluated
- Refer to benefits stated in business case
- Explain assessment
- Describe action required

Benefit Validation

Stated Benefit	Achievement	Explanation	Action Required
3% reduction in operating cost	☐ validated ☒ probable ☐ possible ☐ not possible	Cost reduction based on reducing dependence on contractors; we have incorporated contractor job responsibilities into existing state employee job descriptions	None
Reduce manual effort in process by 50%	☐ validated ☐ probable ☐ possible ☒ not possible	Unable to eliminate all manual spreadsheets; unable to create interface between XYS system and finance; best case is a 25% reduction	Analyze impact to overall project value; decide whether to continue to pursue this goal, or drop from Scope

Exercise

- Refer to your description of expected benefit in the Background Section in the Project Charter.
- List two of the stated benefits in the Benefit Validation Template.
- Describe the process you will use to validate those benefits during Execution.
- Timing: 15 minutes

Closing

California Project Management Methodology

Closing

14. Formal Product Acceptance
15. Operations Metrics
16. Transition to M&O
17. Contract(s) Closure
18. Administrative Closure
19. Closing Checklist
20. Post Implementation Evaluation Report
21. Lessons Learned

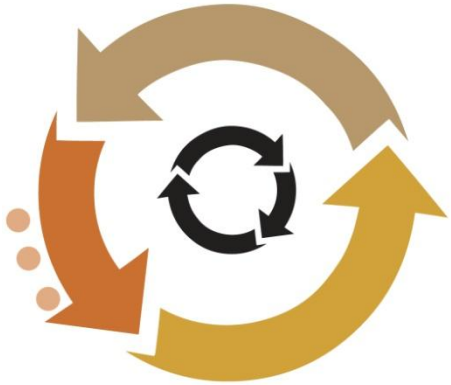
Contract/Administrative Closure

Purpose and Outputs

- Purpose:
  - Formally terminate project activities
  - Hand off completed products or close cancelled project
  - Formally close project contracts
- Outputs:
  - Final product acceptance
  - Contract closure
  - Administrative closure

Final Product Acceptance

- Executing:
  - Deliverable acceptance
  - Product implementation
- Closing
  - Product operating through pre determined cycles
  - Final/formal overall product acceptance



Operations Metrics

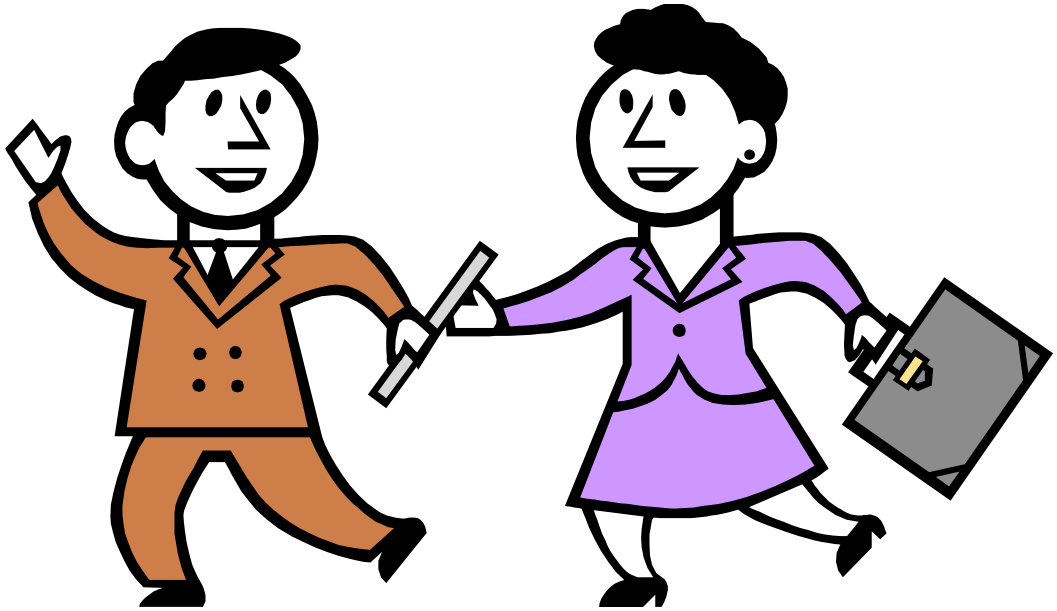
- Product performance measurements
- Established in the requirements
- Communicated to operations group
- Verified as part of the project closing process

Operations Metric Examples

Connections Completed	Count of connections that successfully completed their transfer and confirmation.
Bytes Received	Total number of bytes received since the system started.
Messages Received	Total number of messages received by the system.
Bytes Sent	Total number of bytes sent out to connections.
Commands Sent	Count of commands sent.
Active Receiving Connections	A count of the currently active connections that are open and sending information.
Connections in Queue	Number of connections currently waiting in the queue to be processed.
Connections Failed	Number of connections that have failed to complete successfully.
Average Connection Time	The average time a connection spends communicating with they system.

Transition to M&O

- Execute the Maintenance and Operations Transition plan



Contract(s) Closure

- Process
  - Check if final work products received/done
  - Follow contractor evaluation process
  - Verify final invoices received and processed
  - Archive contract records
- Contract Tracking Database
  - What contract details will
  - be tracked?

Administrative Closure

- Collect, record, document and/or archive all project information needed to formalize and finalize that the project (or phase) is closed
- Closure actions include:
  - Human resources: evaluate and release from the project
  - Contracts: follow all closure procedures
  - Assessment: analyze project success or failure and capture lessons learned
  - Product/process: finalize transfer of ownership/authority of product or operations to the customer
  - Organizational process assets: archive project data and lessons learned

Product/ System Use Review

- Post implementation and customer acceptance
- Observation of how people are using the product
- Part of benefits measurement
- Results may require action

Product/System Use Review Example

Product	Observer	Date Observed	Used as designed	If not, why not	Impact	Action Required and Due Date
Global Template	B. Smith	10/15//07	☒**yes** ☐ **no**			
Base Service Schedule	B. Smith	10/15//07	☐**yes** ☒ **no**	Not adjusting base assignment % when project commitments are made	Resources appear to be over allocated but actually are not	Review procedures w/ resource managers
Resource Allocation Report	B. Smith	10/15//07	☐**yes** ☒ **no**	No trust in data	Unable to do reliable demand planning	See above; and meet with directors to gain additional support

PIER continued

- Attainment of objectives
- Lessons learned
- Milestones

Financial Worksheets

- Financial Summary
  - Last approved alternative costs
  - Actual project costs
  - Cost comparison

Lessons Learned

- Conduct lessons learned sessions for all projects with key internal and external stakeholders
- Focus on technical or developmental processes
  - aided
  - hindered
- Specific results from lessons learned include:
  - Update of the lessons learned database
  - Input to the knowledge management system
  - Updated corporate policies, procedures and processes
  - Improved business skills
  - Overall product and service improvements
  - Updates to the risk management plan

Maintenance & Operations

M&O

Projects enter maintenance and operations and close when benefits have been measured.

Thank You!

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